TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

SYNTHETIC AND NATURAL FIBERS. Diplomatist. *Textile Weekly 37,* 392, 394, 396, 444, 446 (Feb. 22, Mar. 1, 1946).

Details of fiber blending are discussed and 5 illustrations of fabrics blended from combinations of wool, Fibro, and Rayolanda are shown. TTD:6-46.

SYNTHETIC FIBER developments in Germany. Anon. *Textile Research J. 16,* 149-59, 191-200 (Apr., May, 1946).

General textile conditions in Germany prior to the war, and relative economic positions of cotton, jute, sisal, hemp, wool, rayon, and other fibers are analyzed. There was considerable effort in Germany to produce wool-like fibers from either proteins or cellulose. Viscose plants are critically described as to equipment such as pumps, jets, spinning machines, cutters, etc. Some of the difficulties in producing the fibers in Germany and the general approach toward surmounting them are discussed. Wet strength, wear- and laundering-resistance, water-resistance and wool character, are some of the factors covered. Special attention is devoted to production of tire yarn, the tow-to-top process, spinneret manufacture, specialty cellulose fibers, acetate rayon, synthetic fibers and cellulose ethers. Under the acetate process consideration is given to the production of acetic anhydride, acetate flake, continuous filament yarn, staple fibers, saponified acetate yarns, regenerated cellulose and acetate films. Perlon (a German nylon) is discussed in relation to its uses in Germany, monomers used in its production, techniques of spinning and production of Perlon plastics and films. Polyurethanes, vinyl fibers, polyethylene, and polyvinyl alcohol are covered in a general way. Little fundamental work on cellulose chemistry was being done in Germany; however, cellulose ethers received a great deal of attention as emulsifiers, adhesives, food thickeners, and detergents. LWR TTD:6-46.

SYNTHETIC FIBERS and their relation to wool. K. J. Brown. *Textile J. Australia 21,* 38-9, Mar. 1946).

In a lecture the physical properties of some of the synthetics, such as nylon, Aralac, Vinyon, Saran, Velon and Permalon, and wool are briefly discussed and compared. TTD:6-46.

NEW FIBERS AND THEIR APPLICATIONS IN GERMANY DURING WAR PERIOD. Field Information Agency, Technical, Report No. 44; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

RECORDS OF WARTIME IMPPROVEMENTS IN FIBER MANUFACTURE AND IN FIBER PROCESSING: I. G. FARBEN (BADISCHE PLANT), LUDWIGSHAFEN. Field Information Agency, Technical, Report No. 454; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Vegetable fibers I 1

PALCONIA. A new vegetable fiber. C. S. Jones. *Fibres, Fabrics & Cordage 13,* 113 (Mar. 1946).

Fiber lengths of Palconia (a new fiber of Pacific Lumber Co.) range from ⅛ to ½ in. Because of their peculiar form they blend well with wool of a much longer staple and in this mixture are especially suitable for blankets, suitings, and belts. TTD:6-46.

Cotton I 1 a

COTTON FIBER NEPS. Counting neps in fibers. Horace L. Pratt. *Cotton 110,* No. 3, 72-6 (Mar. 1946).

A rapid, practical means of counting neps in cotton fibers is outlined. Control or reduction of neps is not considered. Their relative sizes are valuable in scientific investigation but thought to be impractical for routine mill checking. TTD:6-46.

SEA ISLAND COTTON. H. Martin Leake. *Fibres 7,* 91-4 (Apr. 1946).

The growing and breeding in the West Indies of Sea Island cottons, which yield the most valuable lint, are described. TTD:6-46.

COTTON. SEVEN STEPS TO HELP YOU FACE THE FUTURE WITH COTTON. AIS-41 USDA; 1946. TTD:6-46.

COTTON. FARM PRODUCTION, FARM DISPOSITION, AND VALUE OF COTTON AND COTTON SEED AND RELATED DATA, 1928-44, BY STATES. Henry L. Rasor & Ella Sue Minor, USDA Agricultural Economics Bureau; 1945; 41 pp. TTD:6-46.

COTTON QUALITY STATISTICS, US, 1944-45. USDA Production and Marketing Administration; 1945, 62 pp.; price 15c. TTD:6-46.

COTTON SEED. EFFECT OF VARIETY, LOCATION, AND SEASON ON OIL, PROTEIN, AND FUZZ OF COTTON SEED AND ON FIBER PROPERTIES OF LINT. O. A. Pope and J. O. Ware, USDA Plant Industry, Soils and Agriculture Engineering Bureau. Technical Bull. 903, 1945; 41 pp.; price 10c. TTD:6-46.

COTTON VARIETY TESTS IN GEORGIA, 1942-45. W. W. Ballard, A. L. Smith, & R. T. Bledsoe. Circular 149, Agricultural Exp't. Station, Athens, Ga.; Feb. 1946; 8 pp. TTD:6-46.

LOOKING AHEAD WITH COTTON, SOME TRENDS AND SOME CHOICES. USDA Miscellaneous Publication 584, 1945; 22 pp.; price 10c. TTD:6-46.

Flax — I 1 b

FLAX. Belgium flax industry. Brittain B. Robinson, USDA & C. W. Schoffstall, U. S. Tariff Commission. *Cord Age Mag. 45,* No. 5, 12, 14, 26, 28 (June, 1946).

A survey of the industry by the Joint Intelligence Objectives Agency includes growing, processing and marketing. TTD:6-46.

FLAX FOR CIGARETS. American-made paper for your cigarets. Jas. A. Lee. *Chem. & Met. Eng. 53,* No. 6, 94-7, 138-41 (June, 1946).

In place of the French product, importation of which was interrupted by the war, a cigaret paper made from flax fiber has been developed. The complete process is described and illustrated with numerous photographs and a diagram of the lay-out. TTD:6-46.

Bast fibers — I 1 d

HEMP. Italian hemp industry. Brittain B. Robinson, USDA, & C. W. Schoffstall, U. S. Tariff Commission. *Cord Age Mag. 45,* No. 4, 12, 14, 34 (May, 1946).

Italy's hemp industry is reported upon, with accounts of growing and cutting or fulling (by hand), curing, and retting. TTD:6-46.

GERMAN JUTE INDUSTRY. Brit. Intelligence Objectives Sub-Committee, Report No. 198, price 3s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

JUTE SUBSTITUTES. K. C. Basak. Indian Central Jute Committee, Calcutta. 48 pp.; price 1s.

Reviewed in *Fibres, Fabrics & Cordage 13,* 117 (Mar. 1946). TTD:6-46.

Animal fibers — I 2

ANIMAL FIBERS. Industrial uses of animal fibers. J. L. Stoves. *Fibres 7,* 57-61 (Mar. 1946).

The handling of animal fibers is discussed under 4 heads: furs, fibers, felt, and fabrics. TTD:6-46.

ANIMAL FIBERS. Growth and structure of animal fibers. A. B. Wildman, Wool Industries Research Ass'n. *Textile Mfr. 72,* 149-51 (Mar. 1946).

The microscopic examination of animal fibers shows a similarity in development. Methods of identification and estimation in mixtures or blends are studied, and 7 photomicrographs of different fibers along with several schematic drawings are given. TTD:6-46.

WOOL FIBERS. Relation of fiber diameter to modification of wool resulting from chemical processing. Danile Frishman, Arthur L. Smith & Milton Harris, Milton Harris Associates. *Textile Research J. 16,* 160-2 (Apr. 1946).

Because the reactions between wool and active solutions encountered during processing of fibers are heterogeneous, care must be utilized in handling fibers of widely varying diameters. The comparison of the 30% indices of 18 wool fibers ranging from 18 to 46 microns in diameter is given.
LWR TTD:6-46.

GERMAN WOOLEN INDUSTRY. Field Information Agency, Technical, Report No. 154; price 1s 7d.
Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

LONGER STAPLE WOOL INCREASES INCOME. P. E. Neale, Press Bull. 1010, Agricultural Exp't. Station, State College, N. M.; 1946; 4 pp. TTD:6-46.

Artificial fibers — I 3

SEAWEED PRODUCTS and their uses in America. C. K. Tseng. Scripps Institution of Oceanography. *Chemurgic Digest 5,* 141, 143-50 (Apr. 30, 1946).

The many and varied uses of seaweed (in food, drugs and culture media, etc.,) are considered in some detail, with the recent use of alginic fibers in textile fabrics being briefly noted. TTD:6-46.

ALGINIC FILAMENTS. J. B. Speakman & N. H. Chamberlain (to Cefoil, Ltd.). Brit. P. 572 798, 573 058 & 573 148. *Textile Mfr. 72,* 165, 166-7 (Mar. 1946).

Alginic filaments are made alkali-resistant by treatment with an aldehyde-acid solution. In an example alginic acid yarn, freshly spun, is drawn from the coagulating bath, washed, passed through an HCl bath at pH3 containing formaldehyde (20%) and NH_4Cl (1%), dried at about 95°C, and wound. TTD:6-46.

ARTIFICIAL AND SPECIAL FIBERS MANUFACTURED IN GERMANY. Brit. Intelligence Objectives Sub-Committee, Report No. 206; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Cellulosic rayons — I 3 a

RAYON IN TIRES. Future of rayon in tires. W. D. R. Straughn, E. I. duPont de Nemours & Co. *Can. Textile J. 63,* No. 5, 41-3 (Mar. 8, 1946); *Textile Bull. 70,* No. 2, 120, 122 (Mar. 15, 1946).

The replacement of cotton with rayon for tire cord, not only in truck and bus tires but also in passenger tires, is predicted. TTD:6-46.

TANTALUM SPINNERETS. Spinning and annealing tantalum parts for rayon. C. C. Downie. *Silk & Rayon 20,* 417-18 (Apr. 1946).

The fabrication of tantalum parts for use in the rayon industry is discussed with particular reference to the making of spinneret cups. Spinning of tantalum parts can be carried out more rapidly than on silver and copper but annealing must be more frequent. Diagram of an annealing hearth is shown.

TTD:6-46.

CELLULOSE PREPARATION. Henry Dreyfus. USP 2 394 989, Feb. 19, 1946.

A process for the manufacture of cellulose from wood, straw, grasses, etc., which may be used in paper making or for conversion into viscose, cellulose nitrate, cellulose acetate, etc., consists in treating the material in a finely divided state (e. g. sawdust) with an oxidizing agent, preferably H_2O_2, then with a hot alkali solution before mercerization. In one example elm sawdust is boiled about an hour in 1% NaOH, washed, immersed in acetic acid, containing 0.8 parts of H_2O_2 and 0.1 part of manganese acetate and heated about 4 hrs. at 70°C. After boiling 15-30 min. with 0.5% NaOH solution it is mercerized for a half-hour.

TTD:6-46.

RAYON PULP. Clifford I. Haney, Mervin E. Martin & Troy M. Andrews (to Camille Dreyfus). Can. P. 434 411, Apr. 23, 1946.

In purification of cellulose a slurry of sulfite wood pulp (8 wt.%) is digested in a 7% aqueous NaOH solution at 90-103°C, treated with a 2% aqueous Cl solution, further treated with NaOH and Cl, bleached, washed and dried. TTD:6-46.

COMPARISON OF GERMAN CONTINUOUS ALKALI CELLULOSE PROCESSES: VEREINIGTE GLANZSTOFF, OBERNBURG, AND KELSTERBACH SPINNSTOFF FABRIK, BERLIN-ZEHLENDORF. Field Information Agency, Technical, Report No. 51; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

CONTINUOUS AND STAPLE FIBER PLANTS OF GERMANY. Combined Intelligence Objectives Sub-Committee No. XXVIII-1; price 21s 6d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

CONTINUOUS PROCESS FOR SPINNING VISCOSE YARN AT ZELLWOLLE LENZING AKTIENGELLSCHAFT LENZING, OBERDONAU, AUSTRIA. Price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

CONTINUOUS VISCOSE MAKING: THURINGISCHE ZELLWOLLE A. G. SCHWARZA. Combined Intelligence Objectives Sub-Committee, Report No. XXX-21; price 7d; I. G. FARBENINDUSTRIE, A. G. WOLFEN, Report No. XXX-23; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

GERMAN RAYON INDUSTRY. Brit. Intelligence Objectives Sub-Committee, Report No. 196; price 6s 8d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

MANUFACTURE OF CONTINUOUS FILAMENT YARN AND DURAFLOX STAPLE AT V. GLANZSTOFF FABRIK, OBERBRUCH, GERMANY. Field Information Agency, Technical, Report No. 136; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

PHRIX KREFELD VISCOSE PROCESS DETAILS AT RHEINISCHE KUNSTSEIDE, KREFELD. Field Information Agency, Technical, Report No. 53; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

REGENERATED CELLULOSE FILMS AT I. G. FARBEN (KALLE), WEISBADEN-BIEBRICH. Field Information Agency, Technical, Report No. 59; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

STAPLE FIBER PRODUCTION, VISTRA, NORMAL AND HIGH TENACITY AT I. G. FARBENINDUSTRIE, A. G. WOLFEN. Field Information Agency, Technical, Report No. 36; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

VISCOSE PREPARATION FOR STAPLE FIBER AT ZELLWOLLE LENZING A. G. Field Information Agency, Technical, Report No. 11; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Protein fibers — I 3 b

PROTEIN FIBERS. Man-made fibers defined. Anon. *Ambassador 1946,* No. 5, 117.

"Azlon" is a generic term of ASTM to describe man-made protein base fibers. TTD:6-46.

PROTEIN FIBERS. Progress on research on certain synthetic protein fibers. H. P. Lundgren, Western Regional Research Laboratory, USDA. *Chemurgic Digest 5,* 113 (Mar. 31, 1946).

Progress of research on 2 proteins (egg white and feather keratin fibers) is briefly discussed. Orientation of the fibers has been the first part of this investigation. TTD:6-46.

CASEIN FIBERS. R. L. Wormwell (to Courtaulds, Ltd.). Brit. P. 573 015. *Textile Mfr. 72,* 166 (Mar. 1946).

Casein fibers are rendered resistant to Na_2CO_3 by treatment in an acid solution of a Zn or Ca salt. TTD:6-46.

Synthetic fibers — I 4

SYNTHETIC FIBERS. Structure and elastic properties of synthetic fibers. W. T. Astbury. *Chem. & Ind. 1946,* 110 (Mar. 9, 1946).

A synopsis of a lecture, in which Polythene is the basis for consideration of mechanical and elastic properties of synthetic fibers. TTD:6-46.

SYNTHETIC FIBERS. Research role in producing synthetic fibres. F. Bonnet, Am. Viscose Corp. *Fibre & Fabric 99,* No. 3191, 6-9 (Mar. 30, 1946).

A survey of research's role in synthetic fiber production includes brief mention of rayon, Vinyon, nylon, Velon, Saran, Permalon, Azlon, Aralac and glass fibers. TTD:6-46.

MELT SPINNING. H. Dreyfus; R. W. Moncrieff & W. Pool; H. Dreyfus & W. Pool; R. W. Moncrieff & W. Pool. Brit. P. 573 324-7. *Textile Mfr. 72,* 168 (Mar. 1946).

In a melt spinning process a fused, filament-forming composition is extruded from a closed chamber having 2 fluid phases of different temperatures, while the pressure of the inert gas within is maintained. TTD:6-46.

Nylon type — I 4 a

NYLON. Outlook for 100% nylon fabrics. E. T. Stewart, Can. Industries, Ltd. *Can. Textile J. 63,* No. 5, 38-40 (Mar. 8, 1946).

All-nylon fabrics are discussed as to their use in wearing apparel. Strength, launderability, and quick drying are among the qualities of nylon that recommend it, but for use in dress goods where soft hand and drape are desired it is not yet so successful; mixtures with acetate and viscose sometimes give greater satisfaction. TTD:6-46.

NYLON STAPLE FIBER promises many interesting new blends. Public Relations Dept., E. I. duPont de Nemours & Co. *Traveler* No. 116, 8-12 (July, 1946).

The versatile qualities of nylon, particularly its strength, recommend it for blending. TTD:6-46.

NYLON. E. I. duPont de Nemours & Co. Brit. P. 573 081. *Textile Mfr. 72,* 167 (Mar. 1946).

Improved elasticity is imparted to nylon filaments by heating them dry above 120°C under moderate tension. TTD:6-46.

NYLON FOIL. Wm. H. Markwood, Jr. (to Can. Industries, Ltd.). Can. P. 434 326, Apr. 23, 1946.

A nacreous effect is imparted to a transparent nylon foil by drawing a transparent film of polyhexamethylene adipamide having the moisture content imparted by an atmosphere at 10-30% r. h. TTD:6-46.

NYLON TYPE POLYMER. Bernard N. Brubaker (to Can. Industries, Ltd.). Can. P. 434 323, Apr. 23, 1946.

A nylon type polymer consists of a linear polyamide modified with a phenolated castor oil. TTD:6-46.

I. G. Work on Polyamides: I. G. Farben, Ludwigshafen. Field Information Agency, Technical, Report No. 62; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Perlon U; Polyurethanes at I. G. Farbenindustrie Boringen, Augsburg. Field Information Agency, Technical, Report No. 37; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Vinyl resin type — I 4 b

POLYETHENE. Elmore L. Martin (to Can. Industries, Ltd.). Can. P. 434 329, Apr. 23, 1946.

Polyethene is extruded in the form of films, filaments, tapes, ribbons, etc., at a temperature not in excess of 450°C. TTD:6-46.

P. C. Fibers, I. G. Farbenindustrie, Wolfen. Field Information Agency, Technical, Report No. 16; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Fiber applications — I 5

UNSPUN COTTON. Ernest Stewart, *Mfrs. Record 115,* No. 5, 44-5, 72 (May, 1946).

Cotton insulation and unspun cotton fabrics are lint products requiring neither spinning nor weaving, which are expected to use 1,000,000 bales a year. TTD:6-46.

BATTING. Harmon D. Riehl (to Pacific Lumber Co.). USP 2 398 159, Apr. 9, 1946.

A resilient padding for stuffing mattresses, pillows, bed comforters, arms and seats of chairs, etc., consists of finely shredded redwood bark fiber and cotton in approximate proportion 40-60. TTD:6-46.

CRIMPED CELLULOSIC FILAMENTS. Robt. M. Hoffman (to E. I. duPont de Nemours & Co.). USP 2 398 831, Apr. 23, 1946.

A continuous batting of crimped thermoplastic filaments (e. g. cellulose acetate) is formed by collecting the extruded material on a conveyor belt using an improved dry spinning process. The crimped filament masses thus produced may be used in comforts, sleeping bags, for heat and sound insulation, or (after impregnation with binding agents) molded into panels. TTD:6-46.

FIBROUS MATS. Robt. J. Taylor (to Am. Viscose Corp.). USP 2 399 258-60, Apr. 30, 1946.

Fibrous mats for use as filler for clothing, cushions, comforts, etc., for heat insulation in buildings, refrigerators, etc., as buoyant material in place of kapok or similar substances, and as filter medium for aerosols or fine smokes, are composed of heterogeneously arranged solid and hollow filaments of vinyl resins. TTD:6-46.

INORGANIC FIBERS II

Mineral fibers II 1

MINERAL WOOL. Edw. R. Powell (to Johns-Manville Corp.). USP 2 399 383, Apr. 30, 1946.

An improved method of forming mineral wool fiber masses consists of a spinner rotating at high speed which throws fibers against a conveyor where they are formed into a felted mass by the addition of a binder (asphalt resins, drying oils, etc.). TTD:6-46.

ASBESTOS TEXTILE INDUSTRY IN GERMANY. Field Information Agency, Technical, Report No. 460: price 2s 8d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Glass fiber II 2

FIBERGLAS—its manufacture and uses. A. M. Robertson. *Chem. & Ind. 1946,* 138-9, 146-7 (Mar. 30, Apr. 6, 1946).

A survey of Fiberglas production includes a brief historical background, a discussion of yarn production (including a system of numbering, methods of processing and jointing), dyeing the fibers and fabrics, and various uses (such as for chemical filtration, electric insulation, heat and sound insulation, etc.). TTD:6-46.

COLORED GLASS FIBERS. Robt. A. Schoenlaub (to Owens-Corning Fiberglas Corp.). USP 2 394 493, Feb. 5, 1946.

Glass fibers having relatively great color densities ranging from a bright henna through brown to black are colored by the addition of V_2O_3, use of which does not decrease the normal tolerance of the glass fibers for the usual Cu, Fe, and Mn oxides. TTD:6-46.

CRIMPED GLASS FIBERS. Gaines Slayter & Owens-Corning Fiberglas Corp. (to Fiberglas Canada, Ltd.). Can. P. 434 475, Apr. 30, 1946.

Fibrous glass is drawn out and crimped simultaneously by flowing a stream of molten glass through intermeshing crimping rolls. TTD:6-46.

GLASS FIBERS in the textile picture. John H. Thomas, Owens-Corning Fiberglas Corp. *Textile Bull. 70,* No. 2, 122, 124, 126, 128 (Mar. 15, 1946).

A survey of the presently wide, and constantly expanding, use of glass fibers. TTD:6-46.

FIBROUS GLASS TEXTILE INDUSTRY IN GERMANY. Field Information Agency, Technical, Report No. 461; price 2s 8d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

MANUFACTURE OF GLASS FABRIC IMPREGNATED FIBER USED AS A SUBSTITUTE FOR MICA INSULATION BETWEEN COMMUTATOR SEGMENTS IN MOTORS AND GENERATORS. Combined Intelligence Objectives Sub-Committee, Report No. XXVII-43; price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Applications II 3

GLASS FIBER INSULATION. Chas. E. Binns & Stanley Palmer (to Versil, Ltd.). Can. P. 433 965, Apr. 2, 1946.

Insulating material in the form of a coil is composed of spun glass fibers, formed, varnished, and baked on a drum. TTD:6-46.

ASBESTOS FIBER INSULATION. Clyde C. Schuetz & U. S. Gypsum Co. (to Canadian Gypsum Co.). Can. P. 434 182, Apr. 16, 1946.

Insulating material consists of asbestos fiber bonded by the reaction product of lime, blast furnace slag, and diatomaceous earth. TTD:6-46.

FIBER TO YARN III

Fiber preparation III 1

HACKLING: the Goods machine. Technologist. *Fibres 7,* 87-90 (Apr. 1946).

The Goods machine with a capacity of 1 ton of fiber per hour is described in some detail. There are 2 sizes available: the long reach unit for long staple fibers

such as manila and phormium and the short reach unit for fibers such as sisal and maguey.
TTD:6-46.

Breaking; opening — III 1 a

DECORTICATOR. J. Thomson. Brit. P. 572 666. *Textile Mfr. 72,* 164 (Mar. 1946).

An automatic machine decorticates straw in a continuous reciprocatory motion. TTD:6-46.

Cleaning — III 1 b

FIBER CLEANING. Ernst J. Antoni. USP 2 397 586, Apr. 2, 1946.

A cleaning machine, essentially for renovating mattress filling, fluffs and threshes fibrous material, throwing it against a fine screen which sifts out dirt particles and broken fibers but not the usable fibers.
TTD:6-46.

Carding — III 1 c

CARD CANS. Automatic card can conveyor. Anon. *Textile Weekly 37,* 524, 526 (Mar. 15, 1946); *Textile Recorder 63,* No. 757, 39 (Apr. 1946).

An automatic conveyor (J. & H. Lowe, Ltd.) which transports 4, 6 or even more 12" sliver cans is a labor saving device that does much to increase output.
TTD:6-46.

CARDING. New card clothing tension regulator. Anon. *Rayon Textile Monthly 26,* 213 (Apr. 1946).

A tension regulator is described which allows card clothing to be applied to a card under a constant and determinable tension.
HAM TTD:6-46.

CARDING. Causes of defects in carding. Anon. *Wool Record & Textile World 69,* 514, 517 (Mar. 7, 1946).

Causes of carding defects include: uneven filling of the scale pan (giving uneven slubbing), machine overloading, unequal settings of the workers and doffer, speed of bank rollers, and overcrowding of tape condenser. TTD:6-46.

REASONS FOR BLENDING. J. L. McGregor. *Textile J. Australia 21,* 40-1 (Mar. 1946).

Some of the factors governing the blending of wool with other fibers are cost, quality, counts, and color conformity. TTD:6-46.

DOFFING. John W. Weber (to Proctor & Schwartz, Inc.). USP 2 398 732, Apr. 16, 1946.

An improved ring doffer of a carding machine accurately divides the web of carded fiber with great uniformity in ribbon width and cross-sectional volume.
TTD:6-46

YARN QUALITY AS AFFECTED BY RATE OF CARDING AMERICAN AND EGYPTIAN LONG STAPLE COTTONS. John M. Cook & Roland L. Lee, Jr. USDA Production and Marketing Administration; 1946; 24 pp. TTD:6-46.

Drawing — III 1 d

SCROLL CONDENSER. Molded textile scroll condenser. Anon. *Modern Plastics 23,* No. 7, 120 (Mar. 1946).

A phenolic scroll condenser (H. & B. Am. Machine Co.), compression molded, gives a half twist to fibers during roving. TTD:6-46.

SLIVER DRAWING. Malcolm Hain. USP 2 398 000, Apr. 9, 1946.

In the drawing of slivers (particularly of the bast fibers such as jute, hemp, sisal, etc.,) an improved mechanism which eliminates the use of gills consists essentially of drawing and retaining rolls and a driven roll. TTD:6-46.

DRAWING FRAME. Roderic D. Tarr (to Saco-Lowell Shops). USP 2 398 756, Apr. 16, 1946.

An improved drawing frame producing highly uniform strands consists of a series of pairs of intermeshing fluted rolls of which the bottom ones are positively driven, the top ones coöperating therewith. The bottom roll has a constant outside diameter from end to end while the top has a constant depth of flute. Considerable saving in the cost of manufacture of such rolls is possible by having the same milling cutter shape a rib while forming the bottom of the adjoining groove. TTD:6-46.

DRAFTING MACHINE. Geoffrey Dakin (to Brit. Cotton Industry Research Ass'n). USP 2 399 006, Apr. 23, 1946.

A drafting machine has an improved device for controlling the fibers, consisting of rearward and forward pairs of drafting rollers and of endless revolvable aprons. TTD:6-46.

LAP DRAWING in cotton spinning. Anon. *Textile Mfr. 72,* 134-5; *Textile Recorder 63,* No. 756, 36-7, 63 (Mar. 1946).

By sacrificing fiber parallelization somewhat the lap drawing process can be used effectively, 8 specific advantages being listed and discussed briefly. Four views of the lap draw frame are shown.
TTD:6-46.

TAPE CONDENSER. Lionel Desrosiers (to Davis & Furber Machine Co.). USP 2 399 007, Apr. 23, 1946.

A tape condenser for dividing a fiber web into slivers and condensing these into rovings has an improved fiber severing attachment. TTD:6-46.

DRAWING FRAME CONTROL. Walter J. Scott. USP 2 399 148, Apr. 23, 1946.

An electric stop motion for drawing frames is actuated by the breaking of a sliver so that with the

stopping of the drafting rolls the broken end may be pieced up. TTD:6-46.

Spinning III 2

MULE SPINDLE LUBRICATION. Anon. *Textile Weekly 37,* 582 (Mar. 22, 1946).

A non-splash oiling device (Cowling Spinning Co.) is diagrammed and explained. This splash control is helpful in reducing the danger of mule spinners' cancer in addition to effecting a substantial saving in oil. TTD:6-46.

OILING SPINDLES. Durbo-Oiler device for mule spindles. Anon. *Textile Weekly 37,* 626 (Mar. 29, 1946).

A simple, automatic, non-splashing oiler for mule spindles is explained. TTD:6-46.

RAYON on woolen system. J. T. Drennen & T. A. Boswell. Am. Viscose Corp. *Textile World 96,* No. 3, 133, 209-10, 214 (Mar. 1946).

Spinning of rayon staple on woolen frames is not considered essentially different from spinning wool on the rayon system. Rayon requires less twist and lower draft than wool. A twist multiple of 2½ and 2 times the run, respectively, for warp and filling yarns is thought to be suitable. TTD:6-46.

SPINNING WORSTED YARNS. Worsted effectively spun on cotton frames. François A. Cleyn, Spinners, Ltd. *Textile World 96,* No. 3, 123, 206, 209 (Mar. 1946).

Worsted yarns spun on long-draft cotton machinery are thought to be stronger and more even than Bradford or French-spun yarns. All-combed worsted tops of 50 gr./yd. are necessary for long-draft cotton machinery. A comparative drawing layout and a comparison of labor requirements are given in 2 tables. With better fiber control, higher drafts are possible. TTD:6-46.

TWISTING YARN. Jas. J. Kloran (to Celanese Corp. of Am.). USP 2 397 491, Apr. 2, 1946.

In twisting yarn (cotton, wool, etc.,) an improved traveler ring is made self-lubricating by means of a wick which is threaded through holes in the ring. This ring is long lasting and produces less breaks in the yarn than heretofore. TTD:6-46.

RING SPINNING FRAME. Saco-Lowell Shops. Brit. P. 572 593. *Textile Mfr. 72,* 164 (Mar. 1946).

By rearrangement of rollers and bobbins the width of a spinning frame is reduced by half so that with the unusually narrow frame and with the aid of air currents created by the rotary motion of bobbin and spindle the ring frame is made self cleaning. TTD:6-46.

FANCY YARN FRAME. N. Crosland. Brit. P. 573 258. *Textile Mfr. 72,* 167 (Mar. 1946).

An improved apparatus spins yarn and twists it with another previously spun thread in one continuous operation. TTD:6-46.

Winding III 3

MODERN WINDING and doubling machinery. Frank Ridgway, Arundel Coulthard, Ltd. *Textile Weekly 37,* 428, 430, 432, 486, 488, 490 (Mar. 1, 8, 1946).

A lecture in which the Arunco machines are discussed. They are belt or motor driven; the variations of speeds and ratios of winding to traverse are considered. Details of operation are given along with 2 diagrams of winding and doubling frames. TTD:6-46.

WEFT WINDING. Modern weft winding efficiencies. S. A. G. Caldwell. *Textile Mfr. 72,* 122-4 (Mar. 1946).

In jute and linen weaving 2 forms of weft packaging are discussed: for jute and heavy linen, cop winding is employed; for medium and fine linens, wood or paper cones are used. These 2 methods are discussed in some detail and 3 photographs of winders are shown. TTD:6-46.

THREAD CUTTER. Elmer R. Stahl, Frank W. Schulte, & Wm. J. Eldin (to Celanese Corp. of Am.). USP 2 398 473, Apr. 16, 1946.

In a yarn stretching device a broken thread end automatically actuates an electrical cutter for the broken end, thus preventing entanglement with the unbroken threads and formation of double-end threads. TTD:6-46.

WINDING MACHINE. K. J. Scharer. Brit. P. 572 330. *Textile Mfr. 72,* 164 (Mar. 1946).

An improved traverse drum for thread winding machines has a guide pin arrangement which prevents excess thread from depositing at the edges. TTD:6-46.

YARN WINDER. Brit. Celanese, Ltd. Brit. P. 573 291. *Textile Mfr. 72,* 167-8 (Mar. 1946).

A yarn winder, that collects the yarn after twisting, has a variable speed gear and an idler drum, which, having only slight contact with the package, prevents broken filaments and hairy yarn. TTD:6-46.

YARN HOLDER. Albert Keight (to Camille Dreyfus). Can. P. 434 529, Apr. 30, 1946.

A yarn holder consists of a tubular cardboard core with a flange that is easily removable after completion of winding. TTD:6-46.

Yarn processing — III 4

YARN FINISHING aided by photography. C. Mallard Bowden. *Textile World 96,* No. 3, 137, 139 (Mar. 1946).

Photographic analysis of yarn and careful chemical recovery of caustic (by dialysis) are 2 important features in the finishing of fine cotton yarns.
TTD:6-46.

WARPING MACHINE. Fritz Lambach. USP 2 398 232, Apr. 9, 1946.

An improved warper with a bracket adjustably mounted on rods to permit insertion of beams of various widths winds yarn of various gages.
TTD:6-46.

STRETCHING YARN. Albert W. Hansen & Albin N. Benson (to U. S. Rubber Co.). USP 2 398 787, Apr. 23, 1946.

Plied yarn, particularly gray cotton, is stretched in 1 continuous operation but in successive stages to give increased tensile strength by first treating it with an aqueous solution containing a wetting agent, partially stretching then saturating with hot water and stretching close to the breaking point and finally drying quickly while highly stretched. Tensile strength is increased over 50% and a capacity to stretch further is greatly reduced. TTD:6-46.

YARN PROCESSING. Raymond D. Reel (to Celanese Corp. of Am.). USP 2 398 856, Apr. 23, 1946.

Increased strength is imparted to filaments, yarns, and threads of cellulose acetate and other cellulose derivatives by stretching and steaming single ends of thread, instead of many ends in a warp or rope.
TTD:6-46.

PROCESSING OF SPUN RAYON YARN IN GERMANY. Brit. Intelligence Objectives Sub-Committee Report No. 177, price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Yarn products — III 5

ROPE. Richard F. Warren, Jr. USP 2 399 157, Apr. 23, 1946.

A rope or cable has a core of fibrous material, natural or synthetic (such as cotton, silk, wool, rayon, etc.,) preferably, however, of vinylidene chloride (Vinyon), wound with spiral strands of wire. TTD:6-46.

ROPE. Chas. L. Wright (to Am. Steel & Wire Co.). USP 2 399 419, Apr. 30, 1946.

A spring reverse lay wire rope, manufactured on a rope laying machine, consists of alternate composite strands of steel and hemp. TTD:6-46.

VISCOSE TIRE YARN MANUFACTURE; I. G. FARBEN, ROTTWEIL WURTEMBURG. Field Information Agency, Technical, Report No. 48; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

YARN TO FABRIC — IV

Yarn preparation — IV 1

YARN PREPARATION. Geo. W. Seymour & Dustin Y. Miller (to Camille Dreyfus). Can. P. 434 528, Apr. 30, 1946.

Regenerated cellulose yarn having a cellulose acetate base is treated with (wt.%): 0.6 polymerized ethylene oxide, 0.10 amine salt of a higher secondary alkyl sulfate, as a wetting agent, and 2 polymerized methacrylic acid. TTD:6-46.

Warp sizing — IV 2

SLASHING RAYON. Gelatin grades affect slashing of rayon yarns. H. B. Sweatt, Nat'l. Ass'n. of Glue Manufacturers, Inc. *Textile World 96,* No. 3, 141, 143, 216, 219-20 (Mar. 1946).

The use of gelatin glue in slashing rayon yarn is briefly reviewed; it has developed from a trial and error method to a technique. Gelatin sizes, which can be combined with low temperature starches, will wash out at relatively low temperatures (about 180-190°F), thus saving rayon from damage. Foaming is attributed to mechanical causes, softening substitutes for sulfonated olive oil, and the pH of the softening agent used; remedies are suggested. TTD:6-46.

WARP SIZING. Outline on warp sizing of spun rayon. Ralph Hart. *Rayon Textile Monthly 27,* 192-5 (Apr. 1946).

A detailed list of the factors affecting strength in warps, including a list of the various stiffeners and softeners used along with their characteristics.
HAM TTD:6-46.

WARP SIZING. Applying common sense to warp sizing problems. Little B. Hudson. *Cotton 110,* No. 3, 69-71 (Mar. 1946).

Common sense, not knowledge of chemistry, is often all that is necessary in solving problems of warp sizing. A list of such problems includes: (1) dilution of size by leaky valve or coil, by undue condensation from steam, by careless slasher tender in washing-down squeeze rolls; (2) incorrect measuring of initial makeup water; (3) adding wrong amount of water after size has cooked; (4) breaking down of size due to mechanical agitation or long periods of high temperature. These and other problems are listed and practical suggestions given for coping with them.
TTD:6-46.

Weaving — IV 3

AUTOMATIC WEAVING. H. de G. Gaudin. Brit. Northrop Loom Co. *Textile Weekly 37,* 472, 474, 476 (Mar. 8, 1946); *Textile Mfr. 72,* 131-3, 157 (Mar. 1946).

The history of the Northrop loom is reviewed in a lecture. TTD:6-46.

WEAVING ROOM CHANGE. Modernization in Lancashire shed. Norman Bury, John Bury & Co., Ltd. *Textile Weekly 37,* 546-7 (Mar. 15, 1946).

The modernization of a weaving room, including loom respacing and changeover to electric drive, is described and illustrated. TTD:6-46.

Looms — IV 3 a

LOOM TUNING. Anon. *Textile Recorder 63,* No. 756, 46-8 (Mar. 1946).

Some practical suggestions for loom fixers are given with reference to loom adjustments (or tuning). Variation of pick dwell, setting of drop boxes, and driving by half-cross belts are important points considered. TTD:6-46.

SHUTTLELESS LOOM developed in Britain. Anon. *Textile World 96,* No. 3, 120-1 (Mar. 1946).

The shuttleless loom of C. H. Baddeley is discussed and illustrated. Its chief use seems to be in making fabrics not suitable for mass production weaving. It is thought to be particularly suitable for operation by partially disabled ex-servicemen. TTD:6-46.

SHUTTLELESS LOOM. C. H. Baddeley. Brit. P. 572 651. *Textile Mfr. 72,* 164 (Mar. 1946).

A shuttleless loom has a variable drive in combination with tape wheels for the weft carriers. TTD:6-46.

Loom parts — IV 3 b

LOOM HEDDLE BAR. Frank W. Hollingsworth, Jr. (to Walker Mfg. Co., Inc.). USP 2 397 788, Apr. 2, 1946.

An improved hook for supporting a pair of loom heddle bars allows easy adjustment or replacement of heddles. TTD:6-46.

LOOM SWORD. Mark F. James. USP 2 398 144, Apr. 9, 1946.

An improved, stronger loom sword permits alignment with any reed, thick or thin, by means of a retaining screw threaded in the lay engaging a vertical slot in the sword. TTD:6-46.

WEFT THREAD CUTTER. Richard G. Turner (to Crompton & Knowles Loom Wks.). USP 2 398 264, Apr. 9, 1946.

On a weft-replenishing loom the blade of a thread cutter is actuated by force derived from the lay and is kept from becoming entangled in the severed threads by a small spring. TTD:6-46.

LOOM DENT FRAME. Frederick M. Suchke (to Pioneer Atlanta Co., Inc.). USP 2 398 565, Apr. 16, 1946.

An improved ribbed dent frame permits easy change from dents of one width to dents of another and quick, easy realignment of the frame. TTD:6-46.

DOT FILLING ON LOOMS. Ralph M. Putnam. USP 2 398 597, Apr. 16, 1946.

On a box loom a dot filling retainer consists of an oscillatable shaft carried by the lay of the loom. TTD:6-46.

LOOM PART. Henri Pelcé (to Saint Frères S. A.). USP 2 398 956-7, Apr. 23, 1946.

On a circular weaving loom a shuttle with a row of loosely rotating toothed wheels combs and evenly spaces the warp threads and tightens the weft threads in the bottom of the shed, eliminating the need for movable combs. TTD:6-46.

LOOM BOBBINS. Elmer C. Alix & Harry A. Wilson. USP 2 399 457, Apr. 30, 1946.

An automatic loom has improved means of controlling bobbin selection which avoids the need for constantly refilling the cells, thus giving the operator more time to watch for defects during weaving of the cloth. TTD:6-46.

BOBBIN. Geo. B. Markle, Jr. (to Freeland Spool & Bobbin Corp.). Can. P. 434 354, Apr. 23, 1946.

A bobbin has a tubular barrel and central core supported by radial fins, and removable heads at either end. TTD:6-46.

Control devices — IV 3 c

SHUTTLE CONTROL. Richard G. Turner (to Crompton & Knowles Loom Wks.), USP 2 397 821, Apr. 2, 1946.

An improved loom shuttle check that compensates for variations in the shuttle box temperature (such as is caused by standing idle overnight) is thermally controlled by a shuttle binder which consists of two strips of metal with different coefficients of expansion. TTD:6:46.

LOOM CONTROL. Jos. P. Blouin (to Pacific Mills). USP 2 397 914, Apr. 9, 1946.

By an improved device controlling a weight lever (which is manually adjusted without stopping the loom) the warp thread tension is kept uniform so that thick and thin spots in a woven product are reduced or eliminated. TTD:6-46.

WARP TENSIONING. Albert Moessinger (to Sulzer Frères S. A.). USP 2 398 547, Apr. 16, 1946.

A warp tensioning device that eliminates the differ-

ence in weft density caused by stopping and starting the loom consists essentially of a tensioning beam supported on a rotatable axle and a flexible steel strip connected to the beam to transmit the tensioning forces. TTD:6-46.

LOOM CONTROL. Clifford Darwin (to Crompton & Knowles Loom Wks.). USP 2 398 925, Apr. 23, 1946.

The letoff mechanism of a loom has a variable dampener to prevent too rapid oscillation of the escapement lever and thus permit adjustment for the weight of the fabric woven. TTD:6-46.

LOOM PICKER CHECK. Elphege Nadeau. USP 2 399 562, Apr. 30, 1946.

An improved picker check consists of a resilient finger pivotally mounted on the lay and angularly inclined toward the picker, which stops the shuttle always at the same place without rebound. TTD:6-46.

Fabric construction — IV 3 d

NAMED SELVEDGES: Method of construction that prevents snags and increases saleability of fabrics. Anon. *Silk & Rayon 20,* 492-4 (Apr. 1946).

The use of a named selvedge (i. e. a double selvedge) is suggested as a means of preventing cloth snags and also as a method of advertising. In weaving this double selvedge attention should be paid to the yarn strength and the amount of twist and elasticity, and also to the correct yarn counts, weave, tension, etc. TTD:6-46.

TAFFETA with acetate wool in combed cotton filling. Anon. *Am. Wool Cotton Reptr. 60,* No. 12, 11-12, 37-8 (Mar. 21, 1946).

Construction and details of a taffeta which contains an acetate warp yarn and a combed cotton filling yarn are described. TTD:6-46.

UPHOLSTERY FABRIC. Anon. *Chemurgic Digest 5,* 186 (May 31, 1946).

Nubray and Nublin (rayon and linen) and Nubflax (hemp and linen with rayon) are 3 new fabrics woven with natural and synthetic fibers. TTD:6-46.

WEAVE EFFECTS. Fancy worsted suitings. Combined woolens and worsteds. Portex. *Wool Record & Textile World 69,* 571, 573, 625-7 (Mar. 14, 21, 1946).

Various weave designs and color pattern arrangements are suggested. Pattern arrangements of woolen and worsted yarns in about equal proportions are described. TTD:6-46.

WOVEN FABRIC. Wm. Williamson (to M. Wright & Sons, Ltd.). USP 2 398 484, Apr. 16, 1946.

A double, woven fabric consists of front and rear warps interlaced with double picks of front and rear

wefts respectively, inserted from one edge, binding warps for the wefts and a common selvedge locking the double picks. It is woven on a loom equipped with a pair of simultaneously reciprocating weft-inserting needles. TTD:6-46.

EXTENSIBLE FABRIC. W. Bayes & W. S. Sondhelm (to Ashton Bros. & Co., Ltd.). Brit. P. 573 070. *Textile Mfr. 72,* 167 (Mar. 1946).

An extensible fabric is woven of hard twisted and soft yarns such that the spiral coils of the hard twisted yarn are loosely filled with the soft yarn. TTD:6-46.

SHUTTLE TONGUE. H. Pilkington, Jr. (to Pilkingtons, Ltd.). Brit. P. 573 246. *Textile Mfr. 72,* 167 (Mar. 1946).

A shuttle tongue, whose free end may be lifted and drawn out from the shuttle when necessary, permits easy alignment. TTD:6-46.

Weave defects — IV 3 e

CREASES due to stickers. H. E. Wenrich. *Rayon Textile Monthly 27,* 190-1 (Apr. 1946).

Certain crease defects such as stickers (hang ends), which don't show up until the dyeing and finishing processes, are often to be traced to the warping, sizing or weaving. Care during warp sizing will help to detect these faults. TTD:6-46.

WEAVE DEFECTS. Causes of weft bars. D. C. Snowden, Leeds Univ. *Wool Record & Textile World 69,* 680-3 (Mar. 28, 1946).

The detection and prevention of weft bars in fabric are discussed; 3 general causes are listed: (1) incorrect colors for counts or irregular diameter, (2) imperfect setting-up after reversing, and (3) mechanical imperfections. Occasional causes of weft bars are inefficient templing and allowing the warps to stand overnight or over the week-end while fully tensioned. TTD:6-46.

WEFT TENSION. D. C. Snowden, Leeds Univ. *Wool Record & Textile World 69,* 568-71 (Mar. 14, 1946).

Variations in weft tension and consequent cloth defects are discussed. TTD:6-46.

Knitting machines — IV 4 a

KNITTING MACHINE. Ivan W. Grothey (to Scott & Williams, Inc.). USP 2 398 785, Apr. 23, 1946.

On independent needle knitting machines for knitting 2 separate course yarns (such as for heels or toes) needles having forwardly bent hooks act to prevent trapping and shearing of the yarn. TTD:6-46.

KNITTING MACHINE. Chas. Koppel. USP 2 399 439-40, Apr. 30, 1946.

The needle grooves of dial and cylinder knitting ma-

chines are kept free of lint and dust accumulations by means of scraping edges on the dial plate which cleans the needle and disposes of dirt accumulations. TTD:6-46.

KNITTING MACHINE. Isaac H. C. Green (to Hemphill Co.). Can. P. 433 933, Apr. 2, 1946.

A circular independent needle knitting machine feeds at least 2 yarns to needles and sinkers, one a body yarn the other a pile yarn, in rotary and reciprocatory knitting. TTD:6-46.

KNITTING MACHINE. Karl R. Lieberknecht (to Knitting Machines Corp.). Can. P. 434 074, Apr. 9, 1946).

On a multiple section flat knitting machine an improved welt turning device knits welt fabrics. TTD:6-46.

KNITTING MACHINE. Gerrit H. Nyhuis (to Bear Brand Hosiery Co.). Can. P. 434 310, Apr. 23, 1946.

Seamless, ringless stockings are knit on a knitting machine consisting essentially of a main pattern drum, a cylinder having a series of needles, and a number of independently movable feeds. TTD:6-46.

KNITTING MACHINE. Bernard T. Cole (to B. Toone & Co.). Can. P. 434 519, Apr. 30, 1946.

In knitting fabric on a circular knitting machine a loose end of uniform length is produced by a yarn cutter. TTD:6:46.

Knitting machine parts — IV 4 b

KNITTING MACHINE PART. Chas. F. Barnes. USP 2 397 939, Apr. 9, 1946.

An improved chain link which permits taking out 4 full courses from each top, instead of 12 full courses as heretofore, increases production of stockings and at the same time reduces carded cotton yarn use. TTD:6-46.

KNITTING MACHINE PART. Benjamin F. Coile (to Fidelity Machine Co., Inc.). USP 2 399 002, Apr. 23, 1946.

A true rib fabric is knit on a circular knitting machine, in which a pressure device automatically transfers from the dial needles to the cylinder needles after completing the rib fabric. TTD:6-46.

KNITTING NEEDLE. Fermin P. Saldain. USP 2 399 144, Apr. 23, 1946.

A hook-shaped knitting needle with a hinged lock (which acts as a thread selector) picks up a run or fallen loop. TTD:6-46.

KNITTING MACHINE NEEDLE. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 399 308, Apr. 30, 1946.

A needle with hook-closing tongue, closed by moving the bases toward one another, instead of apart, is made from sheet metal at low cost. TTD:6-46.

KNITTING YARN FEED. Eugene St. Pierre (to Hemphill Co.). USP 2 399 403; Can. P. 434 483, Apr. 30, 1946.

An improved yarn feed for a circular independent needle knitting machine eliminates tension variations, caused by yarn resistance at the cone, and yet permits variations in the rate of feeding, as might be required in changing from rotary to reciprocatory knitting. TTD:6-46.

KNITTING MACHINE SPLICING. G. Wilders & H. E. Woodcock (to W. Cotton, Ltd.). Brit. P. 572 613. *Textile Mfr. 72,* 164 (Mar. 1946).

On a straight-bar knitting machine instead of 2 alternative cams, 1 cam modifies the movement in splicing and plating. TTD:6-46.

WELT KNITTING. Kenneth Howie & Chas. C. Crieble (to Wildman Mfg. Co.). Can. P. 434 244, Apr. 16, 1946.

A welt turning device for a full fashioned knitting machine consists of a welt bar and welt points, each point having a yarn retaining shoulder on the side facing the needles. TTD:6-46.

Control devices — IV 4 c

WARP KNITTING. Carlos A. Hepp (to Alfred Hofmann & Co.). USP 2 397 663, Apr. 2, 1946.

On warp-knitting machines, such as the double tricot, a uniform or equalized yarn tension is obtained throughout each knitting cycle, which relieves the pilot rod and the yarn of any excess strain. TTD:6-46.

KNITTING MACHINE CONTROL. A. Shortland (to Mellor Bromley & Co., Ltd.). Brit. P. 572 941. *Textile Mfr. 72,* 165 (Mar. 1946).

An electrical stop motion for a circular knitting machine has a spring control pivoted dropper which is actuated by a broken yarn. TTD:6-46.

KNITTING MACHINE CONTROL. Robt. H. Sperzel (to Whitney Blake & Co.). Can. P. 434 242, Apr. 16, 1946.

In knitting a fabric covering for electric wires and cables a detector device, actuated by a pivotally mounted feeler in the path of the covered wire, detects a fault in the fabric to stop the knitting machine and prevent damage to the wire. TTD:6-46.

Fabric construction — IV 4 d

NET FABRIC. Max Sadinoff. USP 2 399 392, Apr. 30, 1946.

A knitted net fabric for use as a dish cloth, wiping cloth, polishing cloth, and camouflage net is made run-resistant by means of a locking end bight, which periodically locks the weft thread in the knit loop of a warp. TTD:6-46.

NOVEL KNIT FABRIC. E. Wildt, H. H. Holmes, and A. H. Widdowson (to Wildt & Co., Ltd.). Brit. P. 572 908. *Textile Mfr. 72,* 165 (Mar. 1946).

A knit fabric is made with an interlocking structure of transferred loop effects and embroidery plating on a straight or circular type machine. TTD:6-46.

KNITTED FABRIC. Eugene St. Pierre (to Hemphill Co.). Can. P. 433 932, Apr. 2, 1946.

A method of knitting an accordion fabric on a circular independent needle knitting machine. TTD:6-46.

KNITTING SOCK HEELS. Nora J. Allen (to Patons & Baldwins, Ltd.). Can. P. 433 936, Apr. 2, 1946.

In a method of knitting socks the heel is joined to the leg and foot portions by sewing. TTD:6-46.

KNITTED FABRIC. Eugene St. Pierre & Donat H. Fregeolle (to Hemphill Co.). Can. P. 434 481, Apr. 30, 1946.

A method of knitting a rib-like fabric, in which yarn is fed to all the needles at one feeding station and a second relatively fine yarn to alternate needles at a second feeding station. TTD:6-46.

HOSIERY AND HOSIERY MACHINERY INDUSTRY, HOSIERY NEEDLE MAKING INDUSTRY. Combined Intelligence Objectives Sub-Committee, Report No. XXVIII-48; price 3s 8d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

Pile fabrics — IV 5

ELECTROCOATED PILE FABRICS. Anon. *Chemurgic Digest 5,* 106-7 (Mar. 15, 1946).

In a process similar to that for making sand paper, a pile fabric is produced by continuously feeding an adhesively coated backing between a pair of electrodes and over a moving belt of fibers such as wool, cotton, rayon, nylon, etc., the fibers being attracted to the backing sheet and embedded in the adhesive coating. This electrostatic method requires close humidity control and fibers of uniform length. Densities of 300,000 fibers per sq. in. may be obtained. TTD:6-46.

PILE FABRIC BELT. Thos. Riding (to Goodall-Sanford, Inc.). USP 2 397 808, Apr. 2, 1946.

A coated pile fabric forms the base of an abrasive belt, the fabric being made of a set of pile warps, slack warps, nonstretchable ground warps, and a filling. In a preferred method of manufacture the pile warps are of mohair; the slack warps and filling of carded cotton yarn; and the ground warps, an important feature, of mercerized cotton. TTD:6-46.

PILE FABRIC. Benjamin Kahn. USP 2 398 645, Apr. 16, 1946.

An improved type of pile fabric suitable for fringes, trimmings, etc., consists of relatively long twisted loops in staggered arrangement. TTD:6-46.

PILE FABRIC. Jos. L. Baker. Can. P. 434 122, Apr. 16, 1946.

A method of weaving pile fabric consists of forming 4 sheds from 4 sets of binder warp and pile warp threads, with double picks of weft yarn being inserted simultaneously between the 4 sheds. TTD:6-46.

Narrow fabrics — IV 6

BRAIDING MACHINERY. Modern developments in braiding machinery. Anon. *Textile Recorder 63,* No. 756, 41-2 (Mar. 1946).

An improved type of braiding machine (Braidex by B. & F. Carter Co., Ltd.) used mainly for covering wire has cone supply packages, runs at 1,200 ft./hr., requires small floor space and little maintenance, and operates silently. Three photographs illustrate its operation. TTD:6-46.

BELT. Frederick W. Warren (to Dunlop Tire & Rubber Goods Co., Ltd.). Can. P. 433 922, Apr. 2, 1946.

Superimposed plies of fabric belting are stitched together in a zig-zag pattern and made adherent one to another with natural or synthetic rubber compositions. TTD:6-46.

Fancy fabrics — IV 7

FANCY RAYON CREPE of viscose and acetate yarns. Anon. *Am. Wool Cotton Reptr. 60,* No. 10, 15-16, 51-2 (Mar. 7, 1946).

The construction and arrangement of yarns in various types of fabrics are analyzed and the blister or pebbled effect produced by 2 different yarns in the filling and by difference in twist (S and Z) is discussed. A table shows yarn yardage contraction for regenerated twisted rayon. TTD:6-46.

Fabric processing — IV 8

SEAMS. Method of calculating seam strength. Anon. *Inst. News 13,* No. 7, 10-11 (July, 1946).

A method of calculation (pounds per inch) is given in a simple mathematical formula, i. e. strength of seam equals strength of needle thread (pounds) multiplied by twice the number of stitches per inch times the number of rows of stitches. TTD:6-46.

TENTERING MACHINE. Electrical feed for tentering machines. Anon. *Silk & Rayon 20,* 412-13 (Apr. 1946).

Suggestions for care and maintenance of electrical-feed tentering machines emphasize that particular attention be paid to the guiding finger, contacts inside the feeler box, the solenoids, and clutches. TTD:6-46.

FRINGE CUTTER. Wm. A. Roberts (½ to Thos. W. Roberts). USP 2 397 047, Mar. 19, 1946.

A fringe cutting machine cuts the fringe along the selvedge while holding the fringe taut.

TTD:6-46.

OIL-TREATED FELT. J. R. & F. W. Warren (to Dunlop Rubber Co., Ltd.). Brit. P. 572 747. *Textile Mfr. 72,* 164-5 (Mar. 1946).

To increase the abrasion resistance of felt, sheets of felted fibers are impregnated with an oil emulsion, pressed to remove excess emulsion, and dried to remove water and oxidize the drying oil.

TTD:6-46.

FABRIC STEAMING. Mathieson Alkali Wks. Brit. P. 573 279. *Textile Mfr. 72,* 167 (Mar. 1946).

Creasing of fabric is avoided by a conveyor which carries cloth into a closed steam chamber for steaming and withdraws it in upright accordion folds.

TTD:6-46.

Coated products — IV 9 b

COATING GLASS FABRICS. Marian W. Cerf, Plasticote Co. *Textile Colorist 68,* No. 4, 20-1, 45 (Apr. 1946).

To utilize the large surplus of glass fabrics released by the government at the end of the war, a flexible, nontacky vinyl coating is applied to the fabric, which is then adaptable for taking a vinyl resin printing ink to make the fabric more attractive for domestic uses such as draperies, shower curtains, window shades, etc. TTD:6-46.

SAIL CLOTH IMPREGNATION. Anon. *Fibres 7,* 90 (Apr. 1946).

A brief note on a German paper by Durst. The main impregnant is Archangel tar: in one of 3 formulas given, for every 100 parts of tar, 10 of horse fat and 15 of naphtha are recommended. TTD:6-46.

COATING FABRIC. Wm. F. Grupe (to Interchemical Corp.). USP 2 396 946, Mar. 19, 1946.

A moving web of paper, cellulose or metal foil, metal sheet fabric, etc., may be thermoplastically coated by means of an intaglio printing couple, which consists of a heated intaglio roller and a coöperating impression cylinder. Example of a coating (%): soluble zinc resinate 30-40, hydrogenated castor oil 60-70.

TTD:6-46.

ELASTIC FABRICS. Marc A. Chavannes (to Am. Ecla Corp.). USP 2 397 838, Apr. 2, 1946.

An improved elastic fabric (such as for bathing suits, girdles, corsets, etc.,) consists of a nonelastic but stretchable base fabric adhesively joined by rubber latex to a thin vulcanizing rubber film.

TTD:6-46.

PROTECTIVE COATING. Martin Salo (to Eastman Kodak Co.). USP 2 398 042, Apr. 9, 1946.

A flexible, glossy, transparent, protective coating which may be applied to paper, glass, cloth, metal, leather, wire, etc., consists of an ethylcellulose and a plasticizer. Example: ethylcellulose 70, N-butyl stearate 30 parts. TTD:6-46.

COATED FABRIC. Harold P. Faris & John E. White (to Nat'l. Automotive Fibres, Inc.) USP 2 398 822, Apr. 23, 1946.

Cut fibers (e. g. hair) are embedded in the adhesive coating of carpet material, such as burlap-covered rubber, on a carpet making machine having coöperating conveyor belts with adjustable tension

TTD:6-46.

GASPROOFED FABRIC. Herbert J. Heribert. USP 2 399 027, Apr. 23, 1946.

A nylon type fabric or foil gives protection against mustard gas both because of being resistant and because of reacting with the gas to form substances which are impervious to the poison and remain so indefinitely.

TTD:6-46.

CREPING FABRICS. Wm. W. Rowe (to Cincinnati Industries, Inc.). USP 2 399 256, Apr. 30, 1946.

A creped fabric is produced by applying a very thin coating (2 lbs. of solids per 1000 sq. ft.) of a thermosetting resin to the fabric. TTD:6-46.

FABRIC COATING. W. Charlton, S. G. Jarrett, & E. E. Walker (to I. C. I., Ltd.). Brit. P. 572 959, 572 995. *Textile Mfr. 72,* 165-6 (Mar. 1946).

Fabric or paper is impregnated with a vinyl or vinylidene polymer in the presence of persulfuric acid and a water soluble oxyacid of S. TTD:6-46.

RUBBER COVERED FABRIC. J. Lloyd (to J. Mandleberg & Co., Ltd.). Brit. P. 572 974. *Textile Mfr. 72,* 166 (Mar. 1946).

Two rubber covered fabrics (natural or synthetic), one or both coated with waterproofing composition are joined by passing through unheated pressure rollers.

TTD:6-46.

Laminates — IV 9 c

LAMINATES. Alfred A. Glidden & Walter R. Hickler (to B. F. Goodrich Co.). USP 2 397 936, Apr. 1946.

Ship deck planking, largely splinterproof, comprises a mass of coarse randomly arranged vascular fibers (preferably sisal) bonded (by a thermosetting resin, e. g. phenol-formaldehyde) to a thin web of finer and less resilient fibers such as flax, ramie, wool, silk, rayon, nylon, etc. The coarse fibers should weigh about 15-20 oz./sq. yd. and the finer fibers about 0.3-1 oz./sq. yd. TTD:6-46.

LAMINATING DEVICE. Chas. W. Abbott. USP 2 398 398, Apr. 16, 1946.

A gas heating device, producing precisely defined flames that heat specific areas, binds together 2 webs of thermoplastic material (e. g. Koroseal, Flamenol, etc.). TTD:6-46.

LAMINATE. Jas. G. Ford (to Westinghouse Electric Corp.). USP 2 399 338, Apr. 30, 1946.

A laminated sheet material is composed of sheets of paper, cloth, or the like bonded together by a polyvinyl alcohol by means of a cold pressing process. TTD:6-46.

LAMINATED FABRIC. Brit. Celanese Ltd. Australian P. 120 728. *Textile J. Australia 21,* 32 (Mar. 1946).

A laminated fabric consisting of intermittently bonded plies has interlining bands of thermoplastic knit fabric, the whole being structurally elastic. TTD:6-46.

LAMINATED COLLAR. Brit. Celanese Ltd. Brit. P. 572 902. *Textile Mfr. 72,* 165 (Mar. 1946).

A laundryfast laminated fabric (for collars) consists of layers of cotton and regenerated cellulose fabrics bonded together under heat (140-150°C) and pressure (45 psi) in the presence of water. TTD:6-46.

LAMINATE. Desiré Gonda. Can. P. 434 270, Apr. 23, 1946.

A laminated thermosetting material is composed of a number of fibrous sheets, at least one of which is perforated, all being adhesively united under heat and pressure with a moldable synthetic resin. TTD:6-46.

CLOTHPAPER LAMINATES. Kooperative Förbunder förening. Swed. P. 116 330, Feb. 27, 1943; *Svensk Papperstidning 49,* 209 (May 15, 1946).

A method for laminating paper, cardboard, textile fabrics or the like to a thin layer of wood fiber by means of a colloidal solution. Final setting of the gel is effected by heat after bringing the layers of the laminate together. TTD:6-46.

Specialty uses **IV 9 d**

NONWOVEN PACKAGING FABRIC. Anon. *Ambassador 1946,* No. 5, 116.

The heat-sealing qualities of nonwoven fabrics recommend them for packaging, since the resin binder is selected for heat-bonding capacity and is ready at hand for secondary heat-bonding applications. TTD:6-46.

SARAN FOIL PACKING. Ralph E. Morgan & Paul N. Curry (to Durametallic Corp.). USP 2 395 935, Mar. 5, 1946.

An acid-resistant packing for use in stuffing boxes of pumps consists of an anti-frictional metal foil (such as Ag) wrapped around a core of Saran (85% vinylidene chloride and 15% vinyl chloride). This packing is especially resistant to HF, an acid catalyst much used in producing high octane aviation gasoline. TTD:6-46.

RADIO INTERCEPTING FABRIC. H. Crawshaw. Brit. P. 572 811. *Textile Mfr. 72,* 165 (Mar. 1946).

A woven fabric that intercepts radio signals has fine interlaced warp and weft wires. TTD:6-46.

CHEMICAL RAW MATERIALS V

Plastics **V 1**

CELLULOSE DERIVATIVE. E. I. duPont de Nemours & Co. Brit. P. 572 906. *Textile Mfr. 72,* 165 (Mar. 1946).

A cellulose derivative is made resistant to heat by treatment with a dimethylolurea ether and is useful for coating fabrics. TTD:6-46.

CELLULOSE ETHER. Frank H. Reichel (to Sylvania Industrial Corp.). Can. P. 434 515, Apr. 30, 1946.

Cellulose is etherified in the presence of alkali, the excess alkali being neutralized by an acid gas (CO_2) to form a salt. The reaction is continued until a water-soluble cellulose ether is produced. TTD:6-46.

CELLULOSE ETHER. Henry Dreyfus. Can. P. 434 106, Apr. 9, 1946.

Cellulose ether is produced by impregnating cellulose at atmospheric temperature with a saturated alkali (e. g. NaOH) solution and etherifying with a low alkyl etherifying agent, e. g. an ethyl compound. TTD:6-46.

PLASTICIZER. Chas. C. Clark (to Mathieson Alkali Wks., Inc.). USP 2 398 882, Apr. 23, 1946.

Aliphatic esters of halogenated polycarboxylic acid are effective plasticizers for most resins and cellulose esters. Examples: Diethyl and diamyl dichlorophthalates. TTD:6-46.

PLASTICS in the textile industry. P. T. Gale, Imperial Chemical Industries, Ltd. *Textile Weekly 36,* 1082, 1084, 1086, 1128, 1130, 1132 (Dec. 7, 14, 1945).

Plastics and their application to textile fibers are discussed. The durability in finishing imparted to fibers by the synthetic resins is noted as much superior to older finishing agents like gums and starches. TTD:6-46.

PLASTICS and their application to textiles. C. D. Weston. *J. Textile Inst. 37,* P25-37 (Feb. 1946).

A general review of the fundamentals of addition and condensation polymerization, the relationships between physical properties and structure, and techniques for determining physical properties precede a short discussion of the application of resins to textiles. The

effects of various resins on such properties as flexural rigidity, tensile strength, and washfastness are discussed in a general way.
LWR TTD:6-46.

RESIN FINISHES. New developments in resin finishing. Anon. *Ambassador 1946,* No. 5, 116.

A survey of resin finishing includes discussions on thermosetting and thermoplastic resins, fire resistance, and linenized cotton. TTD:6-46.

Adhesives V 3

ADHESIVE. Omar H. Smith (to U. S. Rubber Co.). USP 2 397 627, Apr. 2, 1946.

An improved adhesive composition for bonding rubber to metal and fabrics consists of a phenol-aldehyde resin. TTD:6-46.

ADHESIVE. U. S. Rubber Co. Australian P. 118 213, *Textile J. Australia 21,* 32 (Mar. 1946).

An adhesive composition composed of an aqueous solution of resorcinol and formaldehyde in presence of an amine, the resulting product being then mixed with an alkaline rubber dispersion, bonds fibrous material to vulcanized rubber. TTD:6-46.

Surface-active compounds V 4

TEXTILE CHEMICAL. Gum taminda, a new substitute for gum tragacanth or carob bean gum. T. P. Ghose & S. Krishna, Forest Research Inst., Dehra Dun. *Indian Textile J. 56,* 506-8, 561 (Mar. 1946).

The preparation of gum taminda by a reaction of borax with tamarind seed pectin is described. Developed during the war, when an acute shortage of starches prevailed, and much cheaper than gum tragacanth, even though not its equal, gum taminda is useful in sizing and in the preparation of printing paste. Easily stored for long periods it gives much more viscous solutions and stronger films than gum tragacanth or starch, and on drying forms a transparent film of great tensile strength. TTD:6-46.

TEXTILE CHEMICAL. John B. Rust (to Montclair Research Corp.). Can. P. 434 368, Apr. 23, 1946.

A textile treating chemical which is water-soluble is made by heating formaldehyde, methyleneaminoacetonitrile, a tertiary amine and an acid chloride (from a mixture of palmitic acid and stearic acid and candelilla wax) at 50-110°C. TTD:6-46.

SURFACE-ACTIVE COMPOUND. Ralph H. McKee. Can. P. 434 280, Apr. 23, 1946.

A method of removing shine from fabric consists in applying as a wetting agent a neutral organic sulfonation product, brushing fabric to raise the nep, and drying it. TTD:6-46.

MANUFACTURE OF SOROMIN S. G. AT I. G. FARBENINDUSTRIE, GENDORF. Field Information Agency, Technical, Report No. 13. Price 7d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.

CHEMICAL PROCESSING VI

WOOL-LIKE RAYON. John H. McKeown & Wm. Penn (to Courtaulds, Ltd.). USP 2 399 559, Apr. 30, 1946.

Improved handle and appearance are imparted to mixed fabrics of wool and regenerated cellulose fibers by treatment with surface-active aliphatic sulfo compounds. The treating solution at the beginning is slightly alkaline and becomes slightly acid at the end. TTD:6-46.

Preparation VI 1

DRYING. Infrared and high frequency drying. J. M. Preston, Manchester College of Technology. *Dyer 95, 262* (Mar. 15, 1946).

A lecture in which it is pointed out that the high speed of drying is counterbalanced by the high cost. TTD:6-46.

SOAPING is key step in preparing cloth for printing. T. N. Patrick. *Textile World 96,* No. 3, 151, 220, 224, 226 (Mar. 1946).

The scouring quality of soap is important in preparing fabrics for dyeing and printing, brightening and clearing of colors being one of the main objectives. TTD:6-46.

SCOURING WOOL. Sam'l. T. Woodside (to Lucson Corp.). USP 2 395 085, Feb. 19, 1946.

In scouring wool an improved process which imparts a pleasant smell to the wool consists in adding to the scouring baths a composition of kerosene and pine oil in the ratio of 51.5-48.47 along with .02% oil of bergamot. TTD:6-46.

DRYING. Geo. P. Vincent & Archie L. Dubeau (to Mathieson Alkali Wks.). Can. P. 434 212, Apr. 16, 1946.

In a continuous process the cloth is steamed by carrying it through a closed steam chamber on a conveyor. TTD:6-46.

Milling; fulling VI 3

FULLING. Ezekiel J. Wilson (to F. C. Huyck & Sons). USP 2 398 342, Apr. 9, 1946.

A fulling mill fulls woolen fabrics in the form of a long string instead of a closed loop, providing controlled means for continuous fulling. TTD:6-46.

Sizing VI 6

SIZE-KIT. W. J. MacNab, Alfred Cotter. *Fibres, Fabrics & Cordage 13,* 148-50 (Apr. 1946).

A general discussion of sizing gives suggestions for

maintaining clean equipment, along with diagrams of various types of sizing vessels. TTD:6-46.

SIZING. John B. Rust & Wm. H. Van Delden (to Montclair Research Corp.). USP 2 397 437, Mar. 26, 1946.

Cellulose derivatives useful as sizing compositions which are wash- and laundry-fast are produced as fibers or foils. In one example a piece of cotton broadcloth was immersed in a solution of a formaldehyde cellulose derivative in 20% aqueous NaOH, squeezed, and dried. The fabric was then passed through a 10% H_2SO_4 bath, washed and dried. A cloth with firm hand and good laundryfastness resulted. TTD:6-46.

YARN SIZING. Brit. Celanese Ltd. Brit. P. 572 844. *Textile Mfr. 72,* 165 (Mar. 1946).

Regenerated cellulose yarn is sized with a composition containing a methacrylic polymer, polymerized ethylene oxide, and a wetting agent. TTD:6-46.

Finishing — VI 7

DYEING AND FINISHING fabrics made from waste blends. Anon. *Am. Wool Cotton Reptr. 60,* No. 13, 11 (Mar. 28, 1946).

Brief, practical suggestions are given for attaining greater efficiency in dyeing, fulling, washing, napping and shearing processes on different blends of wool, wool shoddies, wool waste, worsted, noils, cotton waste and rayon waste, etc. TTD:6-46.

FINISHING. Facts and fiction about fibers and finishes. Raymond B. Seymour, Univ. of Chattanooga. *Am. Dyestuff Reptr. 35,* 128-30 (Mar. 11, 1946).

A discussion of finishing processes and their effects on fibers. TTD:6-46.

MODERN TEXTILE FINISHES. Frank Perry, Stein Hall, Inc. *Can. Textile J. 63,* No. 6, 46-8 (Mar. 22, 1946).

A survey of the various finishing processes emphasizes the increasing exactness required and includes a brief mention of the important rôle that the resins play. TTD:6-46.

FINISHING. Herbert J. West (to Am. Cyanamid Co.). USP 2 397 451, Mar. 26, 1946.

In a finishing treatment for fabrics such as cotton, linen, wool, viscose, silk, etc., the material is impregnated with an aqueous solution of dimethylolurea ether and baked at above 80°C to cure the ether to a resin. TTD:6-46.

COLOR — VII

BLEACHING AND DYEING. Continuous bleaching and dyeing of cotton piece goods. Anon. *Dyer 95,* 259-62 (Mar. 15, 1946).

The bleaching and dyeing of cotton piece goods by intermittent or by continuous methods are discussed and compared. An important advantage of continuous processing (as represented by the Mathieson and du-Pont methods) is that the material first put in process is also first out. Continuous methods in dyeing offer difficulties that vary according to the class of dyeing. Continuous bleaching has its biggest problem in the varying time requirements of kier boiling. TTD:6-46.

BLEACHING, DYEING AND FINISHING. Latest developments in textile bleaching, dyeing and finishing. A. J. Hall. *Textile Recorder 63,* No. 756, 52-3, No. 757, 54, 56, 58, 62 (Mar., Apr. 1946).

A general survey. TTD:6-46.

COLOR as applied to textiles. Alex. J. Bennett. *Textile J. Australia 21,* 10 (Mar. 1946).

The historical significance of color as applied to woven fabrics is briefly studied. TTD:6-46.

PRINTING. Stability of dye liquors and print pastes. J. N. Ireland. *Textile Weekly 36, 37,* 988, 990, 992, 994, 1134, 1136, 1138, 126, 128, 130, 132, 134, 338, 340, 342, 345, 540, 542, 544 (Nov. 23, Dec. 14, 1945; Jan. 18, Feb. 15, Mar. 15, 1946).

Factors which influence the stability of dye liquors and printing pastes include the purity of the water, the solubility or dispersibility of the dye or pigment, and the composition of wetting or penetrating agent introduced into the liquor or paste. Premature reducing and consequent uneven coloring are considered and remedies suggested. Different types of azo dyes and their use are discussed. Hard water is a complicating factor; if used, a cold dissolving process is desirable. TTD:6-46.

Bleaching — VII 1

BLEACHING. Sydney Steele (to E. I. du Pont de Nemours & Co.). USP 2 397 762, Apr. 2, 1946.

An improved storage chamber in the shape of a catenary (a J-shaped box) is especially for use in a continuous bleaching process. TTD:6-46.

Dyeing — VII 2

COLORED EFFECTS on wool by new methods. Edgar I. Noble, Sandoz, Ltd. *Textile J. Australia 21,* 55-9 (Mar. 1946).

In a lecture the development of wool resist processes is traced. Differences in dyeing behavior of chlorinated and unchlorinated wools are analyzed. Obtaining tone-in-tone and 2-color effect by piece dyeing is described. TTD:6-46.

DYEING. Am. Dyestuff Industry. Anon. *Textile Bull. 70,* No. 2, 138, 140, 143 (Mar. 15, 1946).

The history of the industry is briefly reviewed. TTD:6-46.

DYEING for the women's overcoating trade. Anon. *Dyer 95,* 117-18, 167-8, 213-14 (Feb. 1, 15; Mar. 1, 1946).

A range of shades on loose wool dyeing for the women's overcoating trade is given. Chrome brown dyes are preferred to brown acid colors. Two types of piece dye goods are discussed: all wool, and part wool with cotton and shoddy. TTD:6-46.

DYEING NYLON. Some experiments on the dyeing of nylon yarn. J. Boulton. *J. Soc. Dyers Colourists 62,* 65-84 (Mar. 1946).

The dyeing qualities of nylon yarn and its fastness to washing and light are investigated. Absorption of direct dyes by nylon yarn is much slower than by viscose rayon in a neutral bath; in an acid bath, the absorption rate is about the same for nylon as for viscose in a neutral bath. The absorption rate of direct and acid dyes is increased with dyeing temperature. There is extensive degradation of cellulose from vat dyes but little or none from direct dyes upon exposure. Wash- and light-fastness of nylon yarn dyed with acid, direct, acetate, and chrome dyes is compared with that of rayon and wool. Experimental data are given in 35 tables with accompanying graphs. TTD:6-46.

DYEING RAYON AND COTTON. Production of 2-color mercerized cotton:acetate rayon fabrics. Anon. *Dyer 95,* 227-8 (Mar. 1, 1946).

Achieving color contrast in a cotton and rayon fabric is briefly discussed. Mercerization of the cotton is desirable because of the greatly improved appearance; but because of the added expense of weaving mercerized yarns, there remains the problem of mercerizing the cotton after weaving. In dyeing the union fabric therefore the basic consideration is whether to mercerize before or after dyeing. Mercerization before dyeing yields better results. TTD:6-46.

DYEING UNIONS containing rayon staple. C. P. Tattersfield, Courtaulds, Ltd. *Dyer 95,* 239, 241, 267-270 (Mar. 1, 15, 1946).

Union fabrics and yarns are divisible into 2 classes: those in which one fiber is added as a cheapener (often as waste) and those in which the special characteristics of 2 or more fibers are utilized to better advantage than with one fiber alone. This latter class is considered, and the dyeing properties of Fibro, Rayolanda and Fibrolane are compared and discussed. TTD:6-46.

DYEING VINYON. Jackson J. Woodruff. *Fibre & Fabric, 99,* No. 3190, 12-13 (Mar. 23, 1946).

In dyeing Vinyon acetate dyes give level dyeing but generally poor yarn penetration and relatively poor light fastness. Direct and acid dyes generally show little dyeing tendency on Vinyon except in an appropriate solvent. Naphthol dyes give fair light fastness and good penetration. TTD:6-46.

NEW DYEING MACHINE puts no tension on cloth. Anon. *Textile World 96,* No. 3, 158 (Mar. 1946).

A full-width dyeing machine (Sulzer) with tension-free movement of the fabric, is built in 2 sizes. TTD:6-46.

SALT FOR DYEING. Modern salt and brine usage in textile plants. Norman M. Agnew, Internat'l. Salt Co., Inc. *Am. Dyestuff Reptr. 35,* 157-63 Mar. 25, 1946).

Efficient handling of rock salt or evaporated salt in textile plants is stressed. It is more economical to handle salt in solution than dry, piping the brine to the places needing it. Diagrams and photographs illustrate storage and distribution of brine, showing particularly various types of Lixators. TTD:6-46.

UNION DYEING. Dan McGowan, Nat'l. Aniline & Chem. Co. *Rayon Textile Monthly 27,* 204-5 (Apr. 1946).

A lecture, in which various individual dyes are considered with respect to their light fastness. Union (or mixed fiber) dyeing requires more skill than almost any other type. Instead of direct dyes having good affinity for wool, dyes with less affinity for wool than for cotton or rayon are more satisfactory. Chromolan dyes, having easy application and level dyeing properties, are good for light shades. TTD:6-46.

YARN DYEING. Processing procedures for modern yarn dyeing. Robt. W. Joerger, Franklin Process Co. *Cotton 110,* No. 3, 77-9 (Mar. 1946).

After discussing the uses of dyed yarn in colored fabrics, different types of dyeing machines are described. TTD:6-46.

DEVELOPED DYEING. Harold E. Woodward (to E. I. duPont de Nemours & Co.). USP 2 397 454, Mar. 26, 1946.

In dyeing rayon, 1-5% of a polymeric modifying agent is added to the viscose or other cellulose derivative solution, which is then spun and collected in a coagulating bath, the threads or films thus formed being treated with a diazonium salt in order to develop an azo dye. The modifying polymer must be capable of reacting with diazonium salts; the reacting component may be of the phenolic or urea resin type, or a vinyl or maleic anhydride condensation resin condensed with an aminophenol. TTD:6-46.

DYEING ALGINIC FIBERS. C. C. Wilcock & H. Hampson (to Courtaulds, Ltd.). Brit. P. 572 778. *Textile Mfr. 72,* 165 (Mar. 1946).

The dyeing properties of alginic fibers are improved by treatment with an acid solution of cyanamide and formaldehyde. TTD:6-46.

DYEING PILE FABRICS. Whitworth F. Bird (to Collins & Aikman Corp.). Can. P. 434 054, Apr. 9, 1946.

Shade and color contrasts are obtained on pile fabrics in a continuous operation by uniform application of an unfixed dye to a fabric and by local application to definite pattern areas of a printing gum containing a solvent for the unfixed dye, the printing gum and dye being fixed to the fabric simultaneously.

TTD:6-46.

VAT DYEING. Geo. P. Vincent & Archie L. Dubeau (to Mathieson Alkali Wks.). Can. P. 434 497, Apr. 30, 1946.

In vat dyeing of cellulosic textile materials, the material impregnated with an alkali dye solution is treated in an H_2O_2 and $NaHCO_3$ solution at 120-160°F to oxidize the dye, the pH being maintained at 8-11.

TTD:6-46.

Printing — VII 3

PRINTING RAYOLANDA. Printing of Rayolanda fabrics. R. A. McFarlane, Courtaulds, Ltd. *Can. Textile J. 63,* No. 4, 45, 48, No. 6, 48, 50-1, No. 8, 46, 49 (Feb. 22, Mar. 22, Apr. 19, 1946); *Dyer 95,* 235-7, 263-6, 277 (Mar. 1, 15, 1946).

Physical properties of Rayolanda (a wool type rayon) are outlined. Its processing prior to printing is discussed and 3 dyeing recipes are given.

TTD:6-46.

TEXTILE PRINTING. Technicus. *Textile Recorder 63,* No. 756, 49-51 (Mar. 1946).

Some practical suggestions for printing fabrics by means of engraved copper rollers are given. Careful scouring and bleaching of the cloth are necessary. Paste consistency and printing foundation are important.

TTD:6-46.

FABRIC PRINTING MACHINE. Rice Barton Corp. Brit. P. 573 036. *Textile Mfr. 72,* 166 (Mar. 1946).

On a fabric printing machine a differential automatic speed control synchronizes the speeds of the different parts.

TTD:6-46.

DISCHARGE PRINTING. Jasper W. Ivey (to Mathieson Alkali Wks.). Can. P. 434 498, Apr. 30, 1946.

In discharge printing of textile materials an aqueous paste of $NaClO_2$ with a pH about 5-6 is applied to the fabric, which is then steamed by passing over heated rolls.

TTD:6-46.

Color measurement — VII 4

COLOR STANDARDS. Spectrophotometric and colorimetric determination of the colors of the TCCA standard color cards. Genevieve Reimann, Deane B. Judd, & Harry J. Keegan, Nat'l. Bureau of Standards. *J. Research Nat'l. Bur. Standards 46,* 209-47; *J. Optical Soc. Am. 36,* 128-59 (Mar. 1946).

In a comprehensive examination of the TCCA standard color cards (9th ed.) careful calibrations and cross checks are made of color standards. As over half of the 238 color samples are fluorescent and are not suitably evaluated by spectrophotometry, qualitative colorimetric and photometric comparisons have been made with the Munsell color standard. For further checking direct visual comparisons are made with the color scales of the Munsell Book of Color.

TTD:6-46.

COLORIMETRY FOR CHEMISTS. M. G. Mellon, G. Frederick Smith Chemical Co. Columbus, O.; 1945; 140 pp.; price (bound) $1.00.

Reviewed in *J. Chem. Education 23,* 260 (May, 1946).

TTD:6-46.

PROOFING — VIII

Waterproofing — VIII 1

MOISTUREPROOFING. Camille Dreyfus & Bjorn Andersen (to Celanese Corp. of Am.). USP 2 397 093, Mar. 26, 1946.

A moistureproofing coating applied to cellulose acetate films or foils comprises a polystyrene, a wax, a resin, and a plasticizer. Example: Polystyrene 100, tricresyl phosphate 30, paraffin wax 10, ester gum 10, benzol 1000 parts by wt.

TTD:6-46.

WATER-REPELLENT FABRIC. Brit. Thomson-Houston Co., Ltd. Brit. P. 572 740. *Textile Mfr. 72,* 164 (Mar. 1946).

Fabric is made water-repellent by treating with a gaseous organo-silicon halide (such as methylsilicon chlorides).

TTD:6-46.

WATERPROOFING FABRIC. W. Kenyon. Brit. P. 573 250. *Textile Mfr. 72,* 167 (Mar. 1946).

Waterproofing qualities and greater permanence to embossing effects are imparted to fabrics by a wax emulsion treatment. In an example heavy fabric (100 lb.) is treated with 16 lbs. of wax emulsion for 30 min. at 120-130°F, squeezed, and dried.

TTD:6-46.

WATER REPELLENCY. Walter Kaase & Ernst Waltman (to Heberlein Patent Corp.). Can. P. 433 930-1, Apr. 2, 1946.

Water repellency is imparted to textile material by impregnation with an aliphatic-aromatic isocyanate containing a saturated aliphatic radical of at least 10 C atoms. Examples include compounds RNCO in which R is an aliphatic or naphthenic radical with at least 10 C, in a chain bridged by S, SO_2, SO_2NH or NHCO.

TTD:6-46.

Rotproofing **VIII 3**

ROTPROOFING. Fungicidal activity of bisphenols as mildew preventives on cotton fabric. Paul B. Marsh & Mary L. Butler, USDA. *Ind. Eng. Chem. 38,* 701-5 (July, 1946).

Biological assays were made of fungicidal potency of a group of bisphenols and related compounds on cotton fabric. Substitution of 2 Cl or 2 Br atoms in the positions para to the phenolic OH gave higher fungicidal potency than that of nonhalogenated bisphenols or those with further symmetrical halogenation. The most effective compound per unit weight on the fabric was found to be 2,2'-methylenebis(4-chlorophenol), sold commercially as compound G-4. Methods for testing fabric mildew preventives are discussed.
WPU, Jr. TTD:6-46.

Flameproofing **VIII 4**

FLAMEPROOFING. Wm. D. Timmons. USP 2 395 922, Mar. 5, 1946.

A flameproofing coating for fabrics, applied at 225-260°F which consists of a mixture of a coumarone-indene resin and an antimony oxide or sulfide, in a proportion (parts/wt.) of about 8-5, also gives improved resistance to water, weather, mold, fungus, and mildew. TTD:6-46.

PROOFING POWDER BAGS. H. Corteen (to T. B. L. Co., Ltd.). Brit. P. 572 790. *Textile Mfr. 72,* 165 (Mar. 1946).

In the manufacture of powder bags the fabric is made wear-resistant and smolder-proof by treatment with a urea resin and a reagent such as ammonium phosphate. TTD:6-46.

Shrinkproofing **VIII 6**

SHRINKPROOFING WOOL. J. B. Speakman & E. Whewell (to Fullers Earth Union, Ltd.). Brit. P. 573 322. *Textile Mfr. 72,* 168 (Mar. 1946).

A shrinkproofing treatment for animal fibers, particularly wool, consists in treating the fibers or fabrics with an abrasive powder in a nonaqueous medium such as oil, whereby the surface scales are abraded, the oil and powder being then removed by scouring. TTD:6-46.

SHRINKPROOFING WOOL. Edw. R. Trotman (to Wolsey, Ltd.). Can. P. 434 407, Apr. 23, 1946.

A process for shrinkproofing wool consists in treating the wool with Cl or Br dissolved in an organic solvent, then washing to neutralize the acid and emulsify the solvent. TTD:6-46.

STUDIES ON SHRINKPROOFING OF WOOL. Australian Council for Scientific and Industrial Research. Pamphlet No. 115, 1945.

Listed in Supplement to *J. Council Sci. Ind. Research (Australia)* (Feb. 1946). TTD:6-46.

Stabilizing **VIII 7**

CELLULOSE ESTER. Maurice L. Ernsberger & Arthur S. Gregory (to E. I. duPont de Nemours & Co.). USP 2 396 165, Mar. 5, 1946.

In dry spinning a cellulose acetate-crotonate, a fiber is obtained having excellent resistance to dry cleaning solvents. Other mixed esters with one unsaturated acid component may be used. In an example, a cellulose acetate-methacrylate yarn is heated at 175°C for 2 hours with tetraethylthiuram disulfide (1 wt.%) and S. (1.5 wt.%). TTD:6-46.

TESTING AND ANALYSIS **IX**

INSTRUMENTATION in textile processing. Henry Miedendrop, Jr. *Rayon Textile Monthly 27,* 209-12 (Apr. 1946).

A survey of instruments used includes discussion of the Taylor Fulscope, the Brown Electronic Program Controller and the Moistograph, the General Electric Thy-Mo-Trol and others. TTD:6-46.

pH — a brief review. Wm. R. Kenney, LaMotte Chem. Prod. Co. *Rayon Textile Monthly 26,* 201-3 (Apr. 1946).

A non-technical exposition of the meaning, determination, and application of hydrogen ion concentration. HAM TTD:6-46.

TESTING MACHINES. AATCC men describe new testing machines. Anon. *Textile World 96,* No. 3, 121, 244 (Mar. 1946).

Four textile tests and equipment are described in some detail: Cl-retention test, fabric wear tester, color-matching lamps, and continuous indicating pH meter. TTD:6-46.

Physical properties **IX 1**

FABRIC POROSITY TESTER. Anon. *Fibres 7,* 108 (Apr. 1946).

The Cambridge tester, developed during the war to test the porosity of parachute fabrics, has wide application to other textile tests. It is illustrated and its operation described. TTD:6-46.

FABRIC TESTING. Anon. *Chem. Industries 58,* 460, 462 (Mar. 1946).

A tumble jar (Andrew Technical Service) may be used in certain test methods on fabrics such as for inducing a mechanical action on test swatches for dry cleaning tests. TTD:6-46.

FABRIC TESTING. Hardness rocker tests drying time of films, fabric tautness. Anon. *Chem. Preview 9,* No. 2, 54-5 (Mar.-Apr. 1946).

An instrument that tests the hardness and drying time of films, tautness of fabrics (aviation), etc., is described and its operation discussed. TTD:6-46.

FIBER STRENGTH. Measurement of cotton fiber strength by the flat taped bundle method. Jas. C. Barnes and John P. Elting, Kendall Co. *Textile Research J. 16,* 115-23 (Mar. 1946).

The flat taped bundle test as applied to measurement of the strength of cotton fibers is discussed; techniques and apparatus are described in detail. The effects of varying bundle width, weight, direction of fiber, jaw pressure, and separation, humidity, and type of tape have been studied. A calibration method is described which reduces greatly the human factor when there are several operators.

LWR TTD:6-46.

MEASURING DIFFERENCES in wools. Anon. *Chemurgic Digest 5,* 176 (May 15, 1946).

Differences of breed and weathering, which affect composition and formation of wools perhaps more than other fibers, are measured by means of a dyeometer which, utilizing several sensitive dyes, measures the rate of dye exhaustion and detects slight differences in wool character. TTD:6-46.

PHOTOELECTRIC INSTRUMENT for light scattering measurements and a differential refractometer. P. P. Debye, Gen. Aniline & Film Corp. *J. Applied Physics 17,* 392-8 (May, 1946).

Measurement of light scattering of high molecular solutions is theoretically presented and an instrument described. The instrument is an improved copy of a refractometer originally built in 1943 for the Rubber Reserve Corp. Polystyrenes and polyvinyl ether were investigated and the viscosity, molecular weight, and light scattering of respective samples compared.

AR TTD:6-46.

TACKINESS of GR-S and other elastomers. W. F. Busse, J. M. Lambert & R. H. Verderey, Gen. Aniline & Film Corp. *J. Applied Physics 17,* 376-86 (Mar. 1946).

It is shown that tackiness is a complex property depending on numerous factors, including the geometry of the sample. A simple quantitative test and a tackiness tester are described which allow quick relative measurements showing that Koresin is the most effective tackifier found for GR-S.

AR TTD:6-46.

TESTING of yarns and fabrics. III. N. Eyre. *Textile Mfr. 72,* 154-7 (Mar. 1946).

Determination of rayon deniers by a torsion balance and the breaking strength test of single threads by a pendulum type tester are described and the machines illustrated. An IP and a ballistic tester are also shown. TTD:6-46.

TESTING THREAD. Testing of linen sole threads for strength and variability. R. G. Mitton. *J. Textile Inst. 37,* T25-38 (Feb. 1946).

Threads should be conditioned for at least 24 and preferably 48 hours before making any tests. The frequency distribution of breaking loads of threads from any one cop is normal, or approximately so. By choosing adequate techniques for attaching threads to the grips of the machine, breakage of the grips will not give values appreciably different from normal breaks. Threads taken from one part of the cop and used to find the estimated population values for the whole cop give reliable values of the mean breaking load; however, the standard deviation may not be reliable. During the tests, small changes of temperature or relative humidity are without effect. Good independence of operators was observed. The breaking load is dependent on the rate of load application. Breaking load increases when the rate of application increases; however, the standard deviation is independent of rate of load application.

LWR TTD:6-46.

WATERPROOFING TESTS. Devices for producing artificial rainfall for tests of water-repellent and waterproof materials. M. I. Landsberg, Philadelphia QM Depot, & F. J. Moody, Office QMG. *Textile Research J. 16,* 211-18 (May, 1946).

An apparatus is described which produces a rainfall equivalent approximately to 0.11-3″ rainfall per hour, which produces drop sizes that are similar to those found in natural rains of similar intensities. Drop sizes were measured by catching the drops in flour, drying and sorting the pellets formed by the drops. Drop velocity was measured by photographing a water drop during fall, using stroboscopic light. Intensity measurements were made by collecting the falling drops in standard containers spaced regularly on the floor.

LWR TTD:6-46.

YARN TESTING. Warp yarns. L. Bellwood. *Textile Recorder 63,* No. 756, 43-4 63, No. 757, 48-9 (Mar., Apr. 1946).

Significant warp yarn tests are studied from the point of view of usefulness to manufacturers. Six factors which influence choice of suitable warp yarns are considered: threads and picks per inch, extent of yarn deflection, rate of yarn deflection, rate of abrasion of yarn per in. per min., tension on warp thread in the loom, and cloth design. TTD:6-46.

YARN TWIST. Study of twist in woolen yarns. Henry L. Pero, Lowell Textile Inst. *Cotton 110,* No. 3, 81-2 (Mar. 1946).

The relationship of twist to the strength and length of shrinkage in wool yarn is studied and plotted on 2 graphs, the results being summarized in 2 tables.
TTD:6-46.

MEASUREMENT OF IMPORTANT PHYSICAL CHARACTERS OF JUTE FIBER STRANDS AND THEIR RELATION TO YARN QUALITY. K. R. Sen & C. R. Nodder. Indian Central Jute Committee, 20 pp.; price 1s 3d.

Reviewed in *Fibres, Fabrics & Cordage 13,* 117 (Mar. 1946).
TTD:6-46.

Chemical analysis **IX 2**

CELLULOSE STUDIES. II. Estimation of aldehyde groups in oxycellulose by the hypoiodite method. III. Hyperoxidation of cellulose with concentrated sodium hypobromite solutions. Eugene Pacsu; Paul Van Fossen & Eugene Pacsu, Textile Foundation & Princeton Univ. *Textile Research J. 16,* 105-14, 163-70 (Mar., Apr. 1946).

The quantitative estimation of aldehyde groups in periodate oxycellulose by means of alkaline I solutions was investigated under various experimental conditions. The oxidizing reagent was demonstrated to be unstable by potentiometric titration. Variations in the oxycellulose values were also found depending on the age of hypoiodite solutions and the time of standing of the oxycellulose in the alkaline solutions employed. Quantitative data indicating the extent of over-oxidation were obtained in the experiments conducted in diluted alkaline I mixtures. The unreliability of the method is attributed to instability of the oxidizing reagent, to changes suffered by the oxycellulose in alkaline media, and to a nonoxidizing iodoform producing side reaction. Sodium hypobromite solutions (0.2 & 0.4 N) in *N* NaOH are not specific oxidants for any one group of linkages in the cellulose molecule, and under these conditions the oxidation approaches a wet combustion of cellulose. A rapid method for determining hypobromite and bromate ions in presence of each other is offered.
LWR TTD:6-46.

EFFECT OF CHLORINE retention on rayon fabrics. Walter Stump, Am. Viscose Corp. *Rayon Textile Monthly 27,* 189-90 (Apr. 1946); *Am. Wool Cotton Reptr. 60,* No. 10, 17-18 (Mar. 7, 1946).

Rayon shirts treated with urea- or melamine-formaldehyde resins for shrinkproofing purposes show deleterious effects from retention of Cl used in subsequent laundering operations. A new Cl test method which is both qualitative and quantitative (the common KI starch test is only qualitative) is described in some detail.
TTD:6-46.

FABRIC ANALYSIS. Determination of iodine on cloth treated with organic iodine compounds. Solomon Frankfurt, Pacific Mills. *Textile Research J. 16,* 130-1 (Mar. 1946).

A method is described for the determination of iodinated organic compounds deposited on cotton fabrics. It is based on removal of these compounds from the cloth, bringing them into solution, and estimating the I content of the solution. The presence of ammonium vanadate as a catalyst and the subsequent use of sodium bisulfite converts organic I into its ionic form. The cloth is boiled with 10% acid for 25 min. and then treated in the same manner as the solution of an organic compound. The method can only be used for I on cloth since other halogen ions interfere.
LWR TTD:6-46.

FIBER ANALYSIS. Counting thin-walled fibers in cotton by polarized light. Edw. W. S. Calkins, Pacific Mills. *Textile Research J. 16,* 171-3 (Apr. 1946).

The polarized light method of Schwarz for counting thin-walled fibers in cotton gives values of only 10-15% in normal American Upland cotton instead of the 30% usually found by the ASTM caustic soda method. This is held reasonable for a series of studies on neps and consistency among operators in view of the artificial criterion of 2-1 lumen-to-wall ratio called for by the ASTM standard.
LWR TTD:6-46.

MOISTURE IN FIBERS. Moisture relationships of textile fibers. K. W. L. Kenchington. *Fibres 7,* 36-9, 67-70, 95-7 (Feb., Mar., Apr. 1946).

Significance of moisture and measurement of moisture content in textile fibers are discussed, 2 electrical and 2 chemical methods being considered. The effect of moisture in wool and cotton is studied and compared; the effect on the wool fiber is greater than on any other fiber.
TTD:6-46.

MOISTURE RELATIONSHIPS OF JUTE. I. Adsorption isotherm and heat of wetting. W. G. Macmillan, R. R. Mukherjee & M. K. Sen. *J. Textile Inst. 37,* T13-T24 (Feb. 1946).

A detailed account of the current theories on moisture adsorption and heat of wetting of fibers is presented. Adsorption and desorption isotherms have been determined for tossa (*Corchorus olitorius*) and white jute (*C. capsularius*). The hygroscopicity of jute is greater than that of cotton by reason of groups in the lignin, xylan, and other hemicelluloses having more affinity for moisture than have the alcoholic OH groups in cellulose. The heats of adsorption for jute, calculated from Shorter's formula, and the heats of wetting, calculated from the heats of adsorption, agree with experimental determinations.
LWR TTD:6-46.

RAYON. Fibrillar structure of rayon fibers. L. M. Welch & W. E. Roseveare, E. I. duPont de Nemours & Co., & H. Mark, Polytechnic Inst. of Brooklyn. *Ind. Eng. Chem. 38,* 580-2 (June, 1946).

A method was developed for breaking down rayon filaments into fibrils which could be seen with the optical microscope. The manner in which this occurred depended principally upon the crystallite orientation. Rayons having high crystallite orientation separated into fibrils, while unoriented rayons show no evidence of a fibrillar structure. Photomicrographs and x-ray diffraction patterns are presented to illustrate these differences in the structures of highly oriented rayons, which appear similar to those of cotton and ramie, except for the spiral arrangement in the latter.
WPU Jr. TTD:6-46.

CHEMICAL COMPOSITION OF WOOL WITH SPECIAL REFERENCE TO THE PROTEIN OF WOOL FIBER (KERATIN). Australian Council for Scientific and Industrial Research. Bull. No. 38, 1945.

Listed in Supplement to *J. Council Sci. Ind. Research (Australia)* (Feb. 1946). TTD:6-46.

Specifications IX 4

HOSIERY STANDARDS. Hosiery size and fitting standards utilize new device. Warren P. Seem, U. S. Testing Co., Inc. *Textile World 96,* No. 3, 125, 127, 240 (Mar. 1946).

New UHFM (Universal Hosiery Fitting Measure) devices, for putting hosiery knitting specifications and nylon preboarding on the basis of wearing length rather than boarding, are discussed. Proposed basic and UHFM standards are given in 2 tables based on 10,000 leg measurements, which are tabulated in 6 tables. TTD:6-46.

STANDARDIZATION IN TEXTILES. J. Lomax. *J. Textile Inst. 37,* P37-8 (Feb. 1946).

More standardization in the textile industry, similar to the universal counting system like the "S and Z" system, is considered necessary. The denier system is preferred over the cotton count system. Standardized reporting of moisture content of textiles is also considered necessary.
LWR TTD:6-46.

ASTM STANDARDS 1945 SUPPLEMENT, III. Am. Society for Testing Materials, Philadelphia, Pa.; 1945; 503 pp.

Reviewed in *Rayon Textile Monthly 27,* 220 (Apr. 1946). TTD:6-46.

WASTES X

NEW LINT INTERCEPTOR. Anon. *Rayon Textile Monthly 27,* 214 (Apr. 1946).

A cast iron interceptor which prevents lint and wiping waste from getting into drainage lines is a perforated strainer that is easily removed, inspected, and cleaned. TTD:6-46.

HAZARDS XII

COLOR CONDITIONING and its relation to textile manufacturing operations. Anon. *Textile Bull. 70,* No. 2, 137-8 (Mar. 15, 1946).

Color conditioning means the employment of colors on walls, floors, and machinery that will be restful to the workers' eyes. Industrial painting must be utilitarian and functional: in painting machinery 3-dimensional seeing is a term describing painting of machine bodies with light colors (horizon grey, blue or green) and accentuating the actual working area by painting working parts with such colors as spotlight buff or spotlight green to contrast with the body colors. TTD:6-46.

FIRE HAZARDS. Better maintenance reduces mill fires. W. E. Peterson. *Textile World 96,* No. 3, 145, 147, 149 (Mar. 1946).

After a survey of 212 Southern cotton mills, suggestions are made for reducing fires: periodic maintenance checks and careful cleaning, oil surveys for minimizing number and grades of oils and greases used, setting up an oiling schedule for the machines, specifying the exact type and quantity of lubricants used, and installing dust-tight enclosures on electrical fixtures. TTD:6-46.

PROTECTION OF HANDS. Work-damaged hands no longer inevitable say makers of new Barrier creams. Anon. *Silk & Rayon 20,* 484-5 (Apr. 1946).

Dermatological creams which protect hands against organic solvents, dusts, petroleum products, paints, lacquers, varnishes, and various oils, are applied like an "invisible glove" and are effective for 3 to 4 hours. TTD:6-46.

SAFETY—whose responsibility? E. G. Padgett, N. C. Industrial Commission. *Textile Bull. 70,* No. 2, 132, 134, 136 (Mar. 15, 1946).

A plea for the joint assumption of responsibility by management and labor in regard to safety in the mill. The foreman should be a key member of the safety committee. TTD:6-46.

SAFETY TRAINING for the textile industry. W. G. Marks, Irwin Cotton Mills Co. *Textile Bull. 70,* No. 2, 136-7 (Mar. 15, 1946).

A training program is discussed covering 40 hours of instruction in which prepared skits, demonstrations, and films are used. TTD:6-46.

TEXTILE MILLS — XIII

POSTWAR TEXTILE INDUSTRY. Karumuttu Thiagarajan. *Indian Textile J. 56,* 572, 588 (Mar. 1946).

In discussing the future of India's textile industry, particular attention is called to the advantages of the Casablanca high drafting system. A plant layout for 25,200 spindles is sketched. Stress is laid on the desirability of spinning 16-40 counts, instead of 50 and above, until such time as there is improvement in the quality of India's cotton. TTD:6-46.

TEXTILE MILL of tomorrow. C. J. Derenberg, S. H. Rawnsley, Ltd. *Ambassador 1946,* No. 5, 111.

In a lecture are discussed many modernizations that will be seen in future mills, e. g. in automatic weaving and in cleaner, more comfortable working space. TTD:6-46.

Mill buildings — XIII 1

DYE HOUSE OF THE FUTURE. Rufus K. Smith, Owen Osborne, Inc. *Cotton 110,* No. 3, 207-8, 210, 212 (Mar. 1946).

Suggestions for building the dye house of the future include recommendations for 3 levels (drain, machine, and floor), sloping floor toward drain, tile walls, a pilot laboratory, overhead pipes, and exhaust fans. TTD:6-46.

WEAVE ROOM. Ware Shoals completes new weave room. S. Mallard Bowden. *Textile World 96,* No. 3, 129, 131 (Mar. 1946).

A new air-conditioned weave room has new looms (Draper X-2) whose beams hold approximately the equivalent of 1 bale of cotton. New equipment is briefly described and illustrated. TTD:6-46.

Mill machinery — XIII 2

WINDING AND WARPING MACHINERY. New high speed winding and warping machinery. Anon. *Indian Textile J. 56,* 574-5 580 (Mar. 1946).

New high speed machinery (Dixon Hawkesworth, Ltd.) is briefly described and illustrated. TTD:6-46.

MANUFACTURE OF SPINNERETS: EILFELD A. G. GROBZIG. Combined Intelligence Objectives Sub-Committee, Report No. XXX-22, price 7d.

Listed in *Govt. Publications* (*Great Britain*) (Mar. 1946). TTD:6-46.

Mill power — XIII 3

ELECTRIC DRIVING of textile factories. X. Special applications and individual motor drives. E. Howlett. *Textile Mfr. 72,* 139-43 (Mar. 1946).

Electric driving of hydro-extractors is discussed with the aid of a diagram. Different types of automatic temperature control are considered: bimetal time switch or coil and multistep thermostat. Photoelectric relays and 2 types of electric boilers (electrode and immersion) are described. TTD:6-46.

ELECTRICAL DRIVES FOR FINISHING. Finishing-range drives coördinated in numerous ways. R. B. Moore, Gen. Electric Co. *Textile World 96,* No. 3, 153, 155, 226, 229-30, 234, 236, 239-40 (Mar. 1946).

Various electrical drives and coördination equipment used in textile finishing are reviewed with accompanying diagrams. Some of the electrically driven finishing machines include washers, driers, tenters, soapers, mangles, pads, saturators, calenders, etc. The use of a. c. constant and adjustable types and also d. c. brush-shifting and turbine electric types is considered. TTD:6-46.

FUEL SAVINGS IN TEXTILE MILLS. W. Francis. *Textile Mfr. 72,* 90-3, 115-17, 119 (Feb., Mar. 1946).

It is efficient utilization rather than generation of steam that will effect the greater operating economy in textile mills. Consideration should be given to the type of steam required; this will avoid generating unduly high pressures or superheating when not necessary. A steam accumulator is useful in storing steam at relatively high pressures when supply exceeds demand and for supplying low pressure steam when required; it cannot be used unless steam at 2 pressure levels is required. Five principles for economical operation are given: (1) limit superheated steam to power production generally, (2) generate power from steam at full boiler pressure, process steam and steam for heating requirements being taken from the exhaust steam, (3) keep boiler pressure at the minimum necessary to supply the temperature required when power is not generated, (4) do not use high pressure steam for space heating, (5) use heat interchangers to utilize waste heat from process steam or power production. TTD:6-46.

MILL DRIVES. Easy method to determine amount of belt slip. Francis C. Smith, Southern Power & Industry. *Cotton 110,* No. 3, 83 (Mar. 1946); *Southern Power & Industry 64,* No. 7, 100, 102 (July, 1946).

A simple method of calculating the amount of belt slip is explained by means of a formula. TTD:6-46.

SAVING STEAM in dye works. Edw. Ingham. *Dyer 95,* 283, 287 (Mar. 15, 1946).

Abnormal frictional resistance in engines from poor lubrication, faulty adjustment, and imperfect alignment of parts is a common cause of heavy steam consumption. TTD:6-46.

Atmospheric control — XIII 6

AIR CONDITIONING and dust control. S. Holt, Andrew Machine Construction Co. *Textile Weekly 37,* 378, 380, 382, 434, 436, 438, 492, 494 (Feb. 22, Mar. 1, 8, 1946); *Textile Mfr. 72,* 136-8 (Mar. 1946).

A lecture. Air conditioning does not mean merely humidification but includes dust control and air movement, at the same time taking into consideration the effect of air conditioning upon operators. TTD:6-46.

DUST CONTROL and ventilation. Ralph Poole. *Textile Weekly 37,* 534, 536, 538, 584, 586, 588, 590 (Mar. 15, 22, 1946).

The theory and practice of dust control in mills are discussed in a lecture, based on studies of respiration, air flow, combined dry and viscous filter systems, and axial flow fans. TTD:6-46.

ELECTRONIC DUST CONTROL in textile mills. Anon. *Silk & Rayon 20,* 418 (Apr. 1946).

Electronic air filtration consists in ionizing dust particles, thus causing them to be attracted to the filtering machine where they are collected on metal plates, closely spaced and of opposite polarity to the charged dust particles. Only the alternate plates are charged and are stationary, the other plates (negative) move on endless chains through an oil bath which removes the accumulated dust. TTD:6-46.

Process control — XIII 7

STROBOSCOPE ENGINEERING gives answers. Dan McConnell, Proximity Mfg. Co. *Textile World 96,* No. 3, 135, 214, 216 (Mar. 1946).

Stroboscopic effect, particularly as it is applied to textile machinery, is explained with the aid of a diagram. By stroboscopic photography it is possible to see high-speed parts (of spindles, bobbins, travellers, pulleys, shafts, etc.) operating under actual loads while appearing to stand still; and thus dynamic balancing of shafts and cylinders may be accomplished. TTD:6-46.

BASIC SCIENCES — XIV

Chemistry — XIV 2

ACTIVE CHLORINE COMPOUNDS—their chemistry and application. Albert G. Chenicek, Interchemical Corp. *Textile Research J. 16,* 219-25, (May, 1946).

A general review is presented on active Cl compounds, their properties, and use. Chlorine, hypochlorites, N-chloroamines, N-chloroamides, N-chlorosulfonamides, and chlorinated proteins are some of the compounds discussed.
LWR TTD:6-46.

CONTACT ANGLE between water and a monolayer of egg albumin on glass as a function of film pressure. Geo. Jura & Wm. D. Harkins, Univ. of Chicago & Universal Oil Products Co. *J. Colloid Sci. 1,* 137-40 (Mar. 1946).

A monolayer of egg albumin is transferred from a water surface to a glass slide, dried, and the contact angle of water against the dried film measured. The contact angle increases linearly with the film pressure of the monolayer on water before deposition on the slide, e. g. from 30.9° to 56.4° (accuracy 2.5%) as film pressure rises from 12.8 to 23.0 dynes/cm. Extrapolation from observed data suggests that the outer surface of the monolayer on glass at all times consists of both polar and nonpolar groups.
SEM TTD:6-46.

HYDRATES OF CELLULOSE. P. H. Hermans & A. Weidinger, AKU and affiliated companies. *J. Colloid Sci. 1,* 185-93 (Mar. 1946).

X-ray studies indicate that the mercerized modification of cellulose ("hydrate cellulose") forms true hydrates resulting in intramicellar swelling. The lattice distances of the A_o planes change from 7.32 for well-dried fibers to 7.73 A units for fibers containing 11.4% added moisture. Formulas are given for 2 hydrates.
SEM TTD:6-46.

VISCOMETER for measurements during thixotropic recovery; results with a compounded latex. M. Mooney, U. S. Rubber Co. *J. Colloid Sci. 1,* 195-208 (Mar. 1946).

A liquid may be thoroughly stirred in a viscometer immediately before determination of viscosity. After stirring, the viscosity is measured by photographically recording the rotation of a hollow cylinder driven by a nearly constant torque applied through a torsion suspension. Experimental data obtained from a rubber latex solution are in agreement with an empirical relation derived from aqueous suspensions of bitumen spheres.
SEM TTD:6-46.

CHEMISTRY OF CARBON COMPOUNDS. III AROMATIC COMPOUNDS. Victor von Richter. Trans. by A. J. Mee and M. F. Darken, Elsevier Publishing Co., New York City, ed. 3; 794 pp.; price $15.00.

Reviewed in *Rayon Textile Monthly 27,* 220 (Apr. 1946). TTD:6-46.

COLLOID CHEMISTRY. VI. Jerome Alexander, Reinhold Publishing Co., New York City; 1945; 1215 pp.; price $20.00.

Reviewed in *Rayon Textile Monthly 27,* 220 (Apr. 1946). TTD:6-46.

ENCYCLOPEDIA OF CHEMICAL REACTIONS, I. C. A. Jacobson, Editor. Reinhold Publishing Co., New York City; 1946; 804 pp.; price $10.00.

Reviewed in *J. Chem. Education 23,* 260 (May, 1946). TTD:6-46.

HACKH'S CHEMICAL DICTIONARY (AM. AND BRIT. USAGE). Julius Grant, Editor. Blakiston Co., Philadelphia, Pa.; ed. 3; 1946; 925 pp.; price $8.50.

Reviewed in *J. Am. Chem. Soc. 68,* 1140 June, 1946). TTD:6-46.

PHYSICAL CONSTANTS OF HYDROCARBONS, III. Gustav Egloff. Reinhold Publishing Co., New York York City; 1946; 661 pp.; price $15.00.

Reviewed in *Rayon Textile Monthly 27,* 220 (Apr. 1946). TTD:6-46.

PHYSICAL METHODS OF ORGANIC CHEMISTRY. I. Arnold Weissberger, Editor. Interscience Publishers, Inc., New York City; 1945; 736 pp.; price $8.50.

Reviewed in *Del-Chem. Bull. 2,* No. 7, 26 (Apr. 1946). TTD:6-46.

POST-WAR PROSPECTS FOR AMERICAN TEXTILES. Report of the Textile Foundation, Washington, D. C. Archibald M. McIsaac, Jas. G. Smith, John W. Cadman, Jr., Princeton Univ. Chas. Mohair & Co., New York City; 1946; 30 pp. TTD:6-46.

Physics XIV 3

MECHANICAL PROPERTIES OF TEXTILES. V. Three-element model under any experimental condition. VI. Study of creep of fibers. Henry Eyring and Geo. Halsey; H. D. Holland, Geo. Halsey and Henry Eyring, Textile Foundation & Princeton Univ. *Textile Research J. 16,* 124-9, 201-10 (Apr., May, 1946).

The application of a 3-element creep equation similar to the 3-element model in relaxation (developed in the first paper of the series) is complicated by the fact that the creep curve divides into several sections of varying importance. One section is the 3-element creep process, one corresponds to viscous flow, and a third to autocatalytic breaking. An analysis of exploratory creep curves of viscose rayon, cotton, and wool is given. A simple point-by-point method for synthesizing the total force, F, from the partial forces, f, on the dash-pot and spring in series, and F-f, on a single spring, is employed to calculate a behavior of textiles which is characterized by its dependence on any restraint. The equation so derived is applied to the problems of a weight bouncing on the end of a fiber but not against gravity, and of multiple bounces where gravity returns the weight. The question of oscillating weights on the end of a fiber is considered in great detail.

LWR TTD:6-46.

WETTING. Aggregational states in adsorbed films on incompletely wettable solid surfaces. D. H. Bangham, Brit. Coal Utilization Research Ass'n. Laboratories. *J. Chem. Phys. 14,* 352-3 (May, 1946).

The adsorbed film on a solid surface is in a different state of aggregation from that of the bulk liquid if nuclei for condensation of vapor are absent. On contact with bulk liquid a finite contact angle with the solid surface results. Saturated films at incompletely wettable surfaces have more than unimolecular thickness and frequently appear to be limited to 3 molecular layers. On these surfaces the pattern of adsorbed water molecules is incompatible with that of normal water. Hysteresis of contact angle implies that the adsorbed water film exists in 2 equally stable configurations.

EKF TTD:6-46.

TEXTILE RESEARCH XV

GREENVILLE SHOW postponed. Anon. *Cotton 110,* No. 3, 90, 92, 94, 96, 100, 104, 106, 108, 112, 116, 120, 124, 128, 132, 136-7, 153; *Textile World 96,* No. 3, 101-16, 248; *Textile Age 10,* No. 3, 21-4, 26, 28, 30-1, 34, 36, 38, 40-1, 44, 46, 48, 50, 55-6, 58, 60, 62, 64-5, 68, 70, 72, 74, 76-7, 80, 82, 84-5, 88, 90, 92, 94-5, 98, 100, 102-3, 106-8, 110-13, 116, 118-20, 122, 124-5 (Mar. 1946).

Exhibits planned for the Greenville show are described and illustrated in alphabetical arrangement according to companies displaying. TTD:6-46.

SWEDISH CELLULOSE RESEARCH. General survey of activities of the Swedish Wood Research Inst., Wood Chemistry Division and the Cellulose Industry Central Laboratory for the year 1945. Erik Hägglund. *Svensk Papperstidning 49,* 191-204 (May 15, 1946).

The Swedish Wood Research Institute laboratories are engaged largely in research on the pulp and paper industry, including wall board; but some research is also conducted on rayon pulp, paper twine and like topics which are of more direct interest to the textile industry. The final arrangement of buildings and equipment for the research divisions of the cellulose laboratory is described and illustrated with drawings, including floor plans. An important part of the laboratory is the bleaching division, where research is in progress on continuous bleaching. Equipment includes a Wolf jacketed bleaching tank capable of operating with Cl concentrations up to 16%, and a separate room for bleaching with ClO_2. Equipment for rayon research includes a hydraulic mercerizing press and special apparatus for xanthation. Detailed reports of research carried on during 1945 include the preparation of sulfite pulp from spruce wood. TTD:6-46.

SWEDISH RESEARCH. Preparatory work for the central laboratory for the paper industry. Otto Brauns. *Svensk Papperstidning 49,* 215-34 (May 31, 1946).

Final plans for the paper laboratory at the Swedish Wood Research Institute are described and illustrated with drawings, including floor plans. The laboratory is concerned mainly with research on pulp and paper, but devotes some attention to rayon pulp.

TTD:6-46.

SURVEY OF RESEARCH STATUS OF THE PEANUT INDUSTRY. C. Lewis Wrenshall, Report of Southern Research Inst., Birmingham, Ala.; 1946; 69 pp. TTD:6-46.

TEXTILE RESEARCH DEPARTMENT, DR. ALEXANDER WACKER G. M. B. H. BURGHAUSEN. Field Information Agency, Technical, Report No. 20; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Mar. 1946). TTD:6-46.